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VOLUME XVI.

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MURILLO, BARTOLOMEO ESTEBAN, the most eminent artist of the school of Seville, and the most distinguished colourist of the Spanish painters, was born at Seville in the year 1618. As he manifested at a very early age an inclination to painting, he was placed under his uncle, Juan del Castillo, an artist of merit, whose favourite subjects were fairs and markets, and whose pupils, Alonso Cano, Murillo, and Pedro Moya, rank as the best Andalusian artists. Under him Murillo made rapid progress, and painted several pictures while he remained with his uncle. After leaving him he continued to improve in drawing as well as in painting. For some time he painted in the Florentine style, which then prevailed in Spain, and several works of this first period are still preserved at Seville.

In order to improve himself in drawing, he was on the point of going to England to see Vandyck, when he heard of the death of that great master. He thereupon with great diligence to the painting of small pictures of saints, for the trade with America, by which he obtained funds sufficient to undertake, in 1843, a journey to Madrid. Here he derived great advantage from the instruction of his countryman Velazquez, who likewise obtained for him permission to copy the master-pieces of Titian, Rubens, Vandyck, and Ribera, in the royal collection. Returning to Seville in 1845, he excited general admiration by his paintings in the convent of St. Francis. They were in the style of Spagnolo (José Ribera) and Velazquez, then unknown at Seville, and procured him many commissions. He painted several historical pictures for the king of Spain, which gained him great reputation in his own country, and, being sent to Rome as a present to the pope, so highly pleased the Italians, that they called him a second Paul Veronese. He likewise painted many grand altar-pieces for the churches and convents in Madrid, Seville, Cordova, Cadiz, and Granada. Among these are eight large pictures representing the works of Mercy, for the church of St. George in the hospital 'De la Caridad' of Seville, which are distinguished for their admirable composition and force of colouring. Other equally excellent works adorned the church of Los Venerables, and the Capucin convent, for which latter he painted twenty-eight pictures, which were afterwards sent to America. He was engaged on an altar-piece representing the marriage of St. Catherine, for the Capucin convent at Cadiz, when he met with an accident on the scaffolding, from which he never recovered, and he died at Seville, on the 3rd of April, 1685.

But though Murillo was thus eminent in the higher departments of the art, his favourite subjects were beggar boys as large as life engaged in various amusements, which he generally designed after nature. His pictures of such subjects are highly esteemed for their merit, and may be seen in the collections of the English nobility; but there are numberless copies. Murillo excelled likewise in portraits and landscapes. His works are distinguished by their striking character of truth, nature, and simplicity; by the entire absence of the servility of imitation; and by the facility of his touch, and the meanness of his colouring, which in fact seems perfect in every particular. Among his best pictures are 'Moses striking the Rock,' and 'Christ feeding the Five Thousand,' in the convent of St. Francis, at Seville; and 'St. Anthony of Padua,' in the cathedral of that city and in the National Museum at Madrid. Many of his works are in France, particularly in the collection of Marshal Soult, and in the collections of the English nobility and gentry. The Dresden Gallery has a fine 'Virgin and Child' by his hand. Several of his pictures are at Munich, and others at Vienna, in the possession of Prince Esterhazy. By the collection of several Murillos from the convents of Seville, a museum has recently been formed in the cathedral of that city; and there are many more in the National Museum at Madrid. The picture which Murillo preferred to all his other works was that of 'St. Thomas de Vila Nova distributing Alms to the Sick and the Poor.' This, we presume, is the picture in the possession of Mr. Wells, of which Dr. Waagen says, 'This fine picture was formerly in the church of the Franciscans at Genoa. The subject was a peculiarly happy one for Murillo. In the best of the saints, in which priestly dignity and gravity are admirably expressed, he proves his ability in treating such religious subjects from the legends of the monkish saints. The cripples and the sick afforded him, on the other hand, an ample field to show his skill in representations from common life, which we so highly admire in his beggar boys.' Dr. Waagen describes likewise another picture of the same subject, 10 feet high and 6 feet wide, now in Lord Ashburnton's collection, purchased by his lordship of General Sebastiani, and which was formerly at Seville. We refer to Dr. Waagen's work on 'Arts and Artists in England' for descriptions of the numerous pictures by Murillo in our English collections. Murillo raised the art of painting in Spain not only by his own works, but by founding an academy at Seville, of which he was president from the year 1680 till his death. (Cean Bermudez, Diccion. de Profes. Español. de Bellas Artes: Ponz. Viaje de España; El Artista, 1835; La Revista de Madrid, 1835.)

MURPHY, ARTHUR, a dramatic and miscellaneous writer, was born near Elphin, in the county of Roscommon, Ireland, December 27, 1730. His father was a merchant in Dublin. In 1740, Arthur Murphy was entered at the college of St. Omor, where he remained nearly seven years, and, on his return to Ireland, passed two years in a merchant's counting-house at Cork. From thence he came to London, and obtained a situation as clerk in a banking-house, shortly after which he commenced his career as a public writer. On the 21st of October, 1752, he started 'The Grey's Inn Journal,' a periodical in the style of the 'Spectator,' which he carried on to October 12th, 1754. On the 18th of the same month he tried his fortune as an actor on the stage of Covent Garden, and in the character of Othello. His success was but moderate, and after a second season, during which he acted at Drury Lane, he quitted the boards for ever, and resumed his former occupation as a writer by commencing a periodical political journal called 'The Test.' He also began to study the law, but was refused admission to the societies of the Temple and of Gray's Inn on the ground of his having been an actor. He succeeded finally in obtaining admission to Lincoln's Inn, was called to the bar, appointed a commissioner of bankrupts, and died at Knightsbridge, June 18th, 1805, in the seventy-fifth year of his age. His principal works

* Two of these, the 'Prosperous Son' and 'Abraham and the three Angels have been purchased by the Duke of Sutherland.
were a translation of Tacitus, which is a diffusé style, and is a somewhat loose and inaccurate performance; the Lives of Fielding (whose works he edited), Johnson, and Garrick; and upwards of twenty dramatis personæ. The most of these dramatic personæ are the comedies of The Way to keep him, 'All in the wrong', 'Know your own Mind', and 'Three Weeks after Marriage.' His plays, poems, and miscellanies, in 7 vols. 8vo, edited by himself, were published in 1842.

MURRAY, W. [MANSFIELD, LORD.]

MURRAY, JAMES STUART, EARL OF, known in Scottish history by the name of Lord Ruthven, was one of the eight illegitimate children, brothers, children, of King James V. His mother was the lady Margaret, daughter of John Lord Erkine of Mar, nobleman of rank and influence, at court, and one of whose custody the king, when an infant, had been committed. He is supposed to have been born about the year 1533, but the precise time of his birth is not known, nor any particular of his early life except only this, that when but a few years old, his father made him prior of St. Andrew's, with all the revenues of that rich benefice. He afterwards acceded also the priory of Pitenweem, and, after obtaining a dispensation from the holy see to hold three benefices together, that of Mason in Fife in commendam; and in 1544 he took the oath of fealty to Pope Paul III. He was of that intrepidity and military genius for which he was afterwards so distinguished. This was on occasion of the descent into Scotland by the lords Grey de Wilton and Clinton. When the fleet of the latter landed on the coast of Kincardine (as he was then called) collected a little band as determined as himself, and, placing himself at their head, attacked the invaders and drove them back to their ships. Shortly before this he had been in France, having gone thither in the retinue of his youthful sister queen Mary, when he was resolved she should be sent over to the Continent for her education; and at different times afterwards we find him again abroad. He was also present at Mary's marriage with the dauphin of France; and was afterwards dispatched to England to receive the crown and other ensigns of royalty. Circumstances occurred however in Scotland which prevented the execution of this appointment: the Reformation was now rapidly diffusing itself among all classes of the community, and dissolving in its mighty progress the nearest and tenderest ties. In these struggles the prior of St. Andrew's joined the reformers, or, as they were called, the congregation, among whom, by his courage and military skill, the success of his undertakings, the facility or rather audacity with which he accomplished the designs he had on foot, he was highly esteemed. He was aided by the advantages of birth, countenance, and person which he possessed, he gradually acquired a very high degree of consideration. The queen regent (to whom he was appointed a privy councilor, and acted as her confidential minister) communicated all her designs and projects to him in confidence, representing him in particular as an aspiring ambitious man who, under pretence of a reformation in religion, sought to overturn the existing government. That argument however had little weight, or rather it worked a contrary way: his influence continued to increase; and when, in the end of the year 1559, the congregation resolved on taking the government into their own hands, he was one of the council appointed for civil affairs. On the death of the queen regent he was made one of the Lordes Suppers, and then, in the autumn, when he was directed by the convention of estates to proceed to France and invite Mary to return to her native country. Such an appointment suited the views of the prior well: for previous to the death of Francis the lord James had entered into a correspondence with the young queen, soliciting the renewal of his French pension, and in reply Mary had assured him not only of that, but of the highest favours, civil or ecclesiastical, which could be conferred upon him, provided he would return to his duty. His answer was constant, and he urged his influence with representing him in particular as an aspiring ambitious man who, under pretence of a reformation in religion, sought to overturn the existing government. That argument however had little weight, or rather it worked a contrary way: his influence continued to increase; and when, in the end of the year 1559, the congregation resolved on taking the government into their own hands, he was one of the council appointed for civil affairs. On the death of the queen regent he was made one of the Lordes Suppers, and then, in the autumn, when he was directed by the convention of estates to proceed to France and invite Mary to return to her native country. Such an appointment suited the views of the prior well: for previous to the death of Francis the lord James had entered into a correspondence with the young queen, soliciting the renewal of his French pension, and in reply Mary had assured him not only of that, but of the highest favours, civil or ecclesiastical, which could be conferred upon him, provided he would return to his duty. His answer was constant, and he urged his influence with...
as religious grounds, and it was established partly on the same grounds by personal or political considerations. 

By Murray and his lovely but not acceptable wife, Darnley's murder: he reported on the 20th of February, 1567, the last day of Darnley's life, alleging his wife's illness at St. Andrew's as the cause of his departure; and we do not hear of him in Edinburgh again till about a fortnight after, when he had both the earl of Bothwell as the deputed, and Huntly, Argyle and Leith, all parties to it, at dinner at his house. Nor did Murray remain in Edinburgh so as to be present at Bothwell's trial, for in the beginning of March he asked to be excused to the Continent, but on what grounds is not known, and on the 9th, which was just two days before the trial, he set off, visiting London and the court of Elizabeth on his way. He remained abroad till the end of July, returning some few days after the conviction of the king and the queen James. He was therefore absent from the parliament which was held in Edinburgh as late as 1567, as well for the important occurrences attendant on the queen's marriage with Bothwell. He was not ignorant of all that was going on: Coolen too was in constant communication with him, and Murray was in the quarter of which he was not fully in the confidence, but of what grounds is not known, and it is said that Mary was frequently bathed in tears with his upbringings.

On the 2nd of August, 1567, he was proclaimed regent; and with his usual vigour he immediately proceeded to establish himself as such, and to put down the rebellion of the queen against the king, which he has always been associated with. After being summoned by Elizabeth to bear testimony in the trial which had been instituted by that queen against him, he immediately repaired to the appointed place, and did not hesitate in bearing witness against the queen, whereupon his fate was settled. Before his death, he was Sir Robert Murray of Craige, entered in early life into the French service, which became general to the court of Mary, queen of Scots, on account of his then fate. He was Sir Robert Murray, whose name was Robert, and whose fate was settled before his death. For while passing through the streets of Linlithgow, on the 23rd of January, 1570, he was shot through the body by a bullet fired by James Hamilton of Bothwellhaugh, a servitor of the archbishop of St. Andrews, or rather from some personal injury committed by the regent Murray, and which was his cause of death. Murray survived till midnight, when he died, in the thirty-eighth year of his age.

MURRAY, SIR ROBERT, son of Sir Robert Murray of Craige, entered in early life into the French service, on account of his then fate. He was a gentleman of great influence and esteem, and was a member of the council of the kingdom, which he continued to rule with a gentleness and kindness quite unknown to the counsels of his predecessors. But this is scarcely correct. Sir John Home of Renton, who was a great zealot in the cause of episcopacy, which Charles and his predecessors had so much to do with, had gone through the easy part of mathematics, and knew the nature of mankind, beyond which all else was of no account. He had an equality of temper in him which nothing could alter, and in practice the only Stoic ever known. He had a most diffused love to all mankind, and delighted
in every occasion of doing good, which he managed with
great discretion and zeal. He had a superiority of genius
and comprehension to most men, and had the plainest but
most efficacious way of disproving people for their faults
that I ever knew. This was no mean part of his capacity,
and was superior and of itself. He was a very strong
minded, quiet, and sad figure of a man in his
plain dress and sitting on the old second-hand
black end of a burned heather-stem. In this way young
Murray was initiated into literature; and working contin-
ually with his board and brand, he soon became both a reader
and a writer of the very best sort. He was not only, in a
sense, a scholar, and with a feeling in behalf of ‘learning,’ which old status of
still prevails in Scotland, he acquired the nature of the
British advocate. The same ear he after he had suc-
cceeded in 1772. When he was about twenty only, we had
received by his father’s death. Murray had received
his lordship a lieutenant-colonel an account, which
thence, of which expediency, in the library of the
Board retains in manuscripts, he frequently committed his
trade. From this was known among the literati of
Edinburgh, to the varied nature of his information.
In 1759 he published Thoughts on Money, Currency, and
Paper Currency; and soon afterwards an Inquiry into the
Origin and Consequence of the Public Debts. In 1763 he
published Quirks relating to the Proposed Plan for alter-
ing affairs in Scotland; and in 1773, a Letter to Lord
Baliles on his Remarks on the History of Scotland.

The same year, when Dr. Johnson visited Scotland, he addressed a
letter to Lord Baliles, which Murray afterwards read to him.
In 1774 he published some Considerations on the present
State of the Peasage of Scotland. In political life he was
an opposition lord; and is now known to have
maintained a correspondence with the exiled house of
Stuart. His younger brother Alexander Murray was land-
wise so enthusiastic a Jacobite as to propose leading an
insurrection in favour of the Pretender. That brother, it may
also be mentioned, was in 1750 confined, by order of the
House of Commons, for violent interference with a West-
minster election; and as he refused to express contrition on
his knees according to the order of the house, he was det-
tained in confinement upwards of a twelvemonth, and might
have been confined longer had not a prorogation of par-
liament at that time occasioned his release. The fourth and
youngest brother of Lord Elibank likewise attracted con-
siderable notice, distinguishing himself greatly as an officer
in high command during the Canadian war. Lord Elibank
died without issue, 3rd August, 1778, in the seventy-sixth
year of his age.

MURRAY, Dr. ALEXANDER, was born at Dunki-
terick, in the stewardcy of Kirkcudbright, on the 22nd Octo-
ber, 1775. He was the eldest child of his father’s second
marriage, entered by his father Robert Murray, which had subsisted full forty years, a numerous
family; and in the course of about four years after his wife’s
death, himself now entering his 70th year, he married again,
and had two children more. Robert was a healthy and
vigorous man, born in an hilly part of the mountain
districts of Galloway, and distinguished for his
sagacity and habitual good conduct: his whole property
consisted of four moorland-cows and some two or three scores
of sheep, his reward for herding the farm of Kitterick for
Mr. Laudlaw in Clatteringshaws. He had been a shepherd
all his days, like his father before him, and both had con-
stantly remained in the same neighbourhood. His wife was
the daughter of a neighbouring shepherd: all the sons of his
youngest brother became shepherds; and to the same line
of life he designed Alexander.

Alexander however was, in his father’s opinion, a lazy use-
less boy, always committing some blunder or other when sent to
bring home to him in the cattle. He was in fact a weakly child,
not unhealth, yet not stout; and he had neither the rapidity
nor reach of vision which are indispensable to form a good
Aerd: he was also of a sedentary and reclusive turn; and thus
quite unfit for the vacant, indeed, but vigilant life of a she-
pard. To add to this, he was darker and more
likes the style of his mother-tongue. The old man in that
time laid out a halfpenny in the purchase of a catechism,
and from the letters and syllables on the face of the book

won the elements of learning. It was
he began to gather suitable occasions; it was therefore
never sked up, and, throughout the winter, the old
on Sunday had been himself taught reading and writing in
companion, and, according to the custom of those years in his
hand on the board of the old second-hand

sunny day Murray was initiated into literature; and working contin-
ually with his board and brand, he soon became both a reader
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thence, of which expediency, in the library of the
Board retains in manuscripts, he frequently committed his
trade. From this was known among the literati of
Edinburgh, to the varied nature of his information.
In 1759 he published Thoughts on Money, Currency, and
Paper Currency; and soon afterwards an Inquiry into the
Origin and Consequence of the Public Debts. In 1763 he
published Quirks relating to the Proposed Plan for alter-
ing affairs in Scotland; and in 1773, a Letter to Lord
Baliles on his Remarks on the History of Scotland.

The same year, when Dr. Johnson visited Scotland, he addressed a
letter to Lord Baliles, which Murray afterwards read to him.
In 1774 he published some Considerations on the present
State of the Peasage of Scotland. In political life he was
an opposition lord; and is now known to have
maintained a correspondence with the exiled house of
Stuart. His younger brother Alexander Murray was land-
wise so enthusiastic a Jacobite as to propose leading an
insurrection in favour of the Pretender. That brother, it may
also be mentioned, was in 1750 confined, by order of the
House of Commons, for violent interference with a West-
minster election; and as he refused to express contrition on
his knees according to the order of the house, he was det-
tained in confinement upwards of a twelvemonth, and might
have been confined longer had not a prorogation of par-
liament at that time occasioned his release. The fourth and
youngest brother of Lord Elibank likewise attracted con-
siderable notice, distinguishing himself greatly as an officer
in high command during the Canadian war. Lord Elibank
died without issue, 3rd August, 1778, in the seventy-sixth
year of his age.

MURRAY, Dr. ALEXANDER, was born at Dunki-
terick, in the stewardcy of Kirkcudbright, on the 22nd Octo-
ber, 1775. He was the eldest child of his father’s second
marriage, entered by his father Robert Murray, which had subsisted full forty years, a numerous
family; and in the course of about four years after his wife’s
death, himself now entering his 70th year, he married again,
and had two children more. Robert was a healthy and
vigorous man, born in an hilly part of the mountain
districts of Galloway, and distinguished for his
sagacity and habitual good conduct: his whole property
consisted of four moorland-cows and some two or three scores
of sheep, his reward for herding the farm of Kitterick for
Mr. Laudlaw in Clatteringshaws. He had been a shepherd
all his days, like his father before him, and both had con-
stantly remained in the same neighbourhood. His wife was
the daughter of a neighbouring shepherd: all the sons of his
youngest brother became shepherds; and to the same line
of life he designed Alexander.

Alexander however was, in his father’s opinion, a lazy use-
less boy, always committing some blunder or other when sent to
bring home to him in the cattle. He was in fact a weakly child,
not unhealth, yet not stout; and he had neither the rapidity
nor reach of vision which are indispensable to form a good
Aerd: he was also of a sedentary and reclusive turn; and thus
quite unfit for the vacant, indeed, but vigilant life of a she-
pard. To add to this, he was darker and more
likes the style of his mother-tongue. The old man in that
time laid out a halfpenny in the purchase of a catechism,
and from the letters and syllables on the face of the book
that less than a fortnight, his indulgent master giving him whole pages of lessons at a time, he could read portions of the Psalms by the time he was ten. At the possession of a Latin Rudiments: he borrowed it too, and by incessant reading and a little help from the master, before the vacation in August he beat a class of scholars who had been a considerable time at the study. At Martinmas, he was sent to school in a family reading, writing, arithmetic, and Latin.

In this situation he applied to his books with his usual zeal; and having, among other works, bought an old and bulky edition of Ainsworth’s Dutch Dictionary, he translated from A to Z, and again from Z to A. On Whit-Sunday, 1791, he returned to school, and finding a schoolfellow in possession of a Greek grammar, he commenced that language, after spending part of his winter holidays in a Persian class of which he had been a member. He also by this time mastered the Hebrew alphabet, at first from an old Psalms-book, where the letters were marked in succession in the 119th Psalm; and afterwards, together with some Hebrew vocables, from his Ainworth. He now determined on learning that language also, and, accordingly, sent to Edinburgh for a grammar by the man who rode with the post: the man brought him the first edition of Robertson’s ‘Grammar,’ which, over and above the schoolmaster’s text, was related to which, without delay, Murray next applied. At Martinmas of the above year he was again engaged to teach, but at the increased fee of 32s. or 40s., and in this situation he devoted every spare moment to French, Latin, Greek, and Hebrew, of which he will mention that he made great progress in the winter, teaching in a family; but on this occasion at a somewhat lower allowance than before, Murray having chosen the place from its convenience to a school which he wished to attend in the winter evenings. In this school he got hold of Bailey’s ‘English Dictionary,’ which introduced him to the Anglo-Saxon language. He proceeded in this way, taking advantage of every circumstance to increase his knowledge of languages; and at the end of the year, 1794, having been appointed to the chair of Arabic, under the countenance and protection of the Rev. Dr. Baird of that city, Murray was at this time in the nineteenth year of his age. His subsequent progress was comparatively easy. In the course of two years he obtained a mastery or exhibition to the University of Edinburgh; and never relaxing in his pursuit of knowledge, he soon made himself acquainted with all the European languages, and began to form the design of tracing up all the languages of mankind to one source. His requirements as a linguist naturally pointed him out to Corner as a publisher, as a fit person to superintend a new edition of Bruce’s ‘Travels,’ and in the preparation of that work he was employed for about three years, from September, 1802, Murray being now in the thirty-third year of his age, at which time he had access to the papers left by the traveller. He was also at different times employed in contributing to the ‘Edinburgh Review’ and other periodicals. By the advice of his friends, he prosecuted the studies necessary for the Church, to which his attention was directed as a permanent source of employment; and at length, in Dec., 1806, he was appointed assistant and successor to Dr. Murhead, minister of Urr, in the stewartry of Kirkudbright, a charge to which he in 1808 succeeded as full perpetual. Within six months after, he married the daughter of a farmer in the neighbourhood. He still continued his philological pursuits. In 1811 an incident occurred which brought him into prominent notice as a linguist: on the 1st of May, the envoy from Abyssinia, he was applied to by the Marquis Wellesley, as the only person in the British dominions qualified to translate a letter written in Geez, from the governor of Tigrè to his Britannic Majesty; and he performed the task in the most satisfactory way. In the following year a vacancy occurred in the chair of Oriental languages in the University of Edinburgh, of which the town-council of the city are the patrons. The income from this chair was small; the governor of Gezirah, a great trader in slaves, negotiated with Murray, and afterwards his successor, are considerably short of 300l. per annum. It was however perfectly suited to Murray’s taste and habits: it brought him to Edinburgh, where his literary labours could be both meditated and prosecuted; there was every prospect that some other situation would soon, as at present, be connected with it. Great exertions were accordingly made to secure his election; and notwithstanding some fears of his name being opposed, and it, his appointment took place. (Scott’s Mag., July, 1812). On the 26th of August he was formally inducted to the chair, and he began to lecture on the 2nd September, On the following. Soon after that he published, for the use of his students, a small book entitled ‘Outlines of Oriental Philology,’ which is known to have been both composed and prepared for publication in the following March; and-at such times as his health would not permit him to attend as public lecturer, he taught a private class in his own room. The pulmonary complaint however, with which he had been struggling throughout the winter, at length compelled him to suspend his prelections; yet, with its characteristic feceit it always flattered him with hopes of resuming them: and, quite unconscious of his real situation, he continued engaged in his favourite studies till within a few days of his death, which took place on the 15th April, 1813, in the thirty-seventh year of his age. His body was interred in the Grey Friars Churchyard, at the north-west corner of the church.

This great linguist was an eminent example of the pursuit of knowledge under difficulties. His life however may be described rather as the preparation for some resal than as having accomplished much; and the performance of this part of his mission was left to posterity to be distinguished by profound and various learning, was both imperfect and posthumous. It appeared under the auspices of the Rev. Dr. Scot of Constorphine, and is entitled a ‘History of the European Languages, or Researches into the Affinities of the Teutonic, Greek, Celtic, Slavonic, and Indian Nations.’ An extensive acquaintance with these languages convinced the author that all the European languages were closely connected; and in the work now named, it is the author’s wish that all the languages should be traced, to nine euphonie primitives, which primitives he states to be ag, bag, dawg, gwaq, lag, mag, nag, rag, and wag. ‘By the help of these nine words and their compounds,’ says he, ‘all the European languages have been formed.’

MURRHINE (sometimes written Myrrhine) VASES, vessels used by the antients, were made of the stone or hard substance, whatever it might be, termed murrha (μύρρη). They are frequently noticed by the classic writers, and carefully described by them, sometimes mentioned, or clouded, like our cups of agate. Piny speaks of them as coming from the East, from Parthia and Carmania. He adds that they were first brought to Rome by Pompey after his victory over the Persians in 32 B.C. The term murrha serves, introduced Murrhine vessels into the city, and Pompey was the first who dedicated to Jupiter of the Capitol precious stones and cups, after his triumph on that occasion. They afterwards came into common use. (Plin., Hist. Nat., li. xxxvii., edit. Harduin, vol. ii. p. 767.) The abbe L. Blond, in the 43rd volume of the ‘Mémoires de l’Acad. des Inscriptions,’ supposes that these vessels were made of the Oriental sardonyx. Others have supposed the material to have been a kind of Chinese stone. The best alabaster in antient times was furnished from the quarries of Carmania, which may possibly have supplied the materials for the murrhine vessels.

MURVIEBRO. [Sacountum.] MUS, ibn Nosseir, Governor of Mauritania. The origin and genealogy of this conqueror are differently stated by the Arabic writers. Some make him the son of Nosseir, son of Abd-ul-Rahman, son of Zeyd, of the tribe of Talib; others assert that he was a member of the Hamitic tribe of Lakum; while there are not wanting genealogists who deny his ever having had any connexion with either of the above-mentioned tribes, and suppose him to be the son of Nosseir, governor of the great tribe of Umayyah; the first khalif of the race of Umayyah in the East. All however agree that his father Nosseir was a mauli, or adherent of Muawiyah, that he served under his banners against Ali, and, as a reward for his services, was raised to the post of commander of the khalif’s body-guard.

According to all accounts, Musa’s birth is placed in the
year 19 of the Flight (A.D. 640). He seems to have made his first campaigns under his father, and to have been present at almost all the battles then fought by the Moslems. His bravery and the military austerity which he displayed on several occasions gained him a favourite with ‘Abd-ol-azza Ibn Merwan, a prince of the royal family then governor of Egypt, who attached him to his person, served him in command, and, having previously obtained leave from his brother the khilaf, undertook to launch the Drunken Bard, which was to achieve the conquest of Africa, the year 79 of the Flight (A.D. 698-9). What the first expeditions of Mūsā were, is not satisfactorily ascertained. The Arabian writers say, in vague terms, that he pushed the West and penetrated into the interior of Africa, returning with a rich spoil and thousands of captives. But he seems to have achieved nothing brilliant until the year 88 (A.D. 707), when the caliph ‘Abd al-Malik named him governor of Mauritania, with instructions to complete the conquest of the country.

Mūsā took his departure from Egypt at the head of a numerous army, and, partly by persuasion, partly by force, succeeded in reducing its obedience the motley tribes that inhabited the northern shores of Africa. He seems to have experienced no difficulty in uniting under his standard men whose habits were not dissimilar from those of the Arabs, and who, relying on ancient traditions current among them believed themselves to be sprung from the same stock as the Arabs. Also, it is a belief, some say, that Mūsā dexterously tried to strengthen, whole tribes flocked to his banners, embraced the religion of the Prophet, and, led by his lieutenants, marched to new conquests. Tangier, Carthage, and other places, not yet held by the Africans, were speedily subdued; a fleet commanded by Abdullah, Mūsā’s eldest son, scouring the Mediterranean, and ravaging the islands of Sicily, Sardinia, and Mallorca; and in the year 91 of the Flight (A.D. 709) the whole of northern Africa, from the Pillars of Hercules to the delta of Egypt, acknowledged the laws of the conqueror.

At this critical moment, when the restless ambition of the African governor had been stimulated by the prospects of immediate success, he determined to invade Spain, and promising to aid him in his enterprise.

No sooner was Mūsā made acquainted with the divisions among the Goths, than he eagerly seized on the opportunity offered to him. In the year 96 of the Flight, Mūsā, with a force of eight thousand men, invaded Spain, and crossed the Pyrenees, and invaded Spain, and promising to aid him in his enterprise.

On the news of this signal victory reaching Africa, Mūsā, who was far from expecting so complete success, felt a deep sense of the importance of the event. While he hastily made the necessary preparations to cross over into Spain, he sent orders to Tārik not to move from his position, and to wait for further instructions. But the Arabian general had gone too far to be stopped by a mere message from his master. Eager for plunder, and bent on the subjugation of the whole country, he penetrated into the heart of Spain, and, before his master Mūsā had set his foot on the peninsula, the opulent city of Toledo, the capital of the Visigothic monarchy, together with an immense booty, had fallen into his hands.

At this period Mūsā arrived in Spain, breathing vengeance against the man who, by disobeying his commands, had deprived him of his hard-won spoils. He landed at Algeciras, in June, A.D. 712, at the head of 18,000 men. He took him with three of his sons, Abdulaziz, Merwan, and Abdullah, leaving his eldest son Abdullah to govern Africa in his stead. His first step was to subdue such provinces as, by Tārik’s precipitate march upon Toledo, had remained untouched. He laid siege to Sevilla, which he reduced in a month (July, 712). Carmona and other neighbouring cities shared the same fate. Then he marched to Lucena and Cadiz, having made his rapid march, seized on Niebla, Beja, and other considerable cities (August, 712). His victorious career was stopped for a time before the walls of Merida, which he reduced, after an obstinate defence on the part of the garrison, towards the end of March, 713, and returned to Toledo, where, having had an interview with Tārik, he publicly reproached him with his disobedience, caused him to be beaten with rods, confiscated his property, and had his castellans taken and kept until orders came from the khilaf to relieve him of his command. Before the command of one of the divisions of the army.

The remainder of Spain was speedily subdued. Tārik, at the head of his troops, marched westwards, and, after reducing the intermediate provinces, laid siege to Lognogued. Mūsā took a northern direction, reduced Salmamol, advanced as far as Astorga, and thence, returning to the Douro, followed the course of that river to Beria, passed the mountains, and arrived in sight of Saragossa, which Tārik was then investing, and which surrendered in July, 713.

From thence Tārik proceeded to Valencia, which, together with Murviedro, Xativa, and other considerable cities of those districts, were reduced with amazing rapidity; while Mūsā himself, after detaching some forces under the command of his favourite, Nasr, to subdue the plains of Murcia, marched towards the Pyrenees, reduced on his passage the cities of Calahorra, Lorida, Barcelona, and, crossing that mountain barrier, penetrated into France.

How far Mūsā advanced into that country is not satisfactorily ascertained. According to Al-makkari, an Arabian writer, who compiled a history of Spain from the best sources (Arab. MSS., in the Brit. Mus., 7324), Mūsā subdued not only Narbonne, but the whole of the province known by the name of Gallia Gothica; but, as other Arabian historians are silent on the subject, and as the Christian chroniclers of France have not made the slightest mention of this incredible report, it is impossible to say whether Mūsā did really cross the Pyrenees, or whether he did not advance with any important results. On his return from this expedition to the Pyrenees, a messenger from the khilaf Al-walid, who now became alarmed at Mūsā’s increase of power, reached his camp, and summoned him, together with Tārik, to the royal presence.

Tārik hastened to obey the orders of the khilaf, and departed immediately for the East (Sept., 713); but Mūsā, who, if any fault can be placed in the Arabian writers, had conceived a violent ambition to extend his conquests over the whole of Spain, Germany—and forcing his way from Spain to Constantinople, thus connecting the eastern and western possessions of the Arabs—refused to comply with the summons. Having submitted Tārik to his master, Mūsā, in order to prevent the execution of his conquests, by promising him a large share of the spoil, he directed his course towards Asturias and Galicia, which the Moslems had not yet visited. But his reluctance to obey the imperial mandate added to the suspicions already entertained about his views, which were represented, as aiming at independence, and a more peremptory order was sent for his return. The khilaf’s second messenger, whose name was Adb al-Nasr, reached him at Lugo, in Galicia, caught the bridle of his horse, and, in presence of the army, commanded him to return to him with the news. Mūsā did not venture to disobey the order of the khilaf, and, entrusting the government of Spain to his son Abdulaziz, reluctantly commenced his journey, in March, 714.

On arriving in Africa, where he had already been some time, he summoned his Abd al-Makr in his government of Carma, gave to his son Abdulaziz the command of Tangier and other important forresses on the coast, and taking the road to Egypt, proceeded to Syria with a numerous escort, and, mingling his train with the camels of the enemy, in front of the conquest, besides being followed by thousands of captives, among whom were 400 Gothic nobles, sumptuous-y arrived.
after caused his death, so that Musa's reception was not so brilliant as he had anticipated. But if Al-walid's treatment of the man who had added so rich a jewel to his crown was tainted with deep ingratitude, that of his brother and successor Suleyman was not only unjust but cruel. It is generally asserted that while Musa and his escort were approaching the capital, he received from that prince an invitation not to enter Damascus in his brother's lifetime, but to delay his entrance until the commencement of the new reign, in order that the Spanish treasures and captives might grace his accession. This command, Musa, from motives of fidelity towards his sovereign, imprudently disregarded; and on the accession of Suleyman, remained exposed to all his vengeance. He was cast into prison, beaten with rods, exposed to the sun until he was nearly dead, and lastly, fined two hundred thousand pieces of gold, a sum which all his treasures amassed in Spain were insufficient to satisfy, and which was raised among his friends. Suleyman's vengeance did not stop there; the two sons whom Musa had left to govern Africa in his absence were deprived of their governments, and orders were despatched to Spain (Aug. 716) to put to death Abdulaziz, whose head was brought to Damascus and shown to his disconsolate father by Suleyman himself, who asked him, with a bitter smile, if he recognized it. The afflicted father turned away at the sight, exclaiming, 'Cursed be he who has slain a better man than himself.'

Musa died in the greatest poverty at Wadi-l-kork, in the Hejaz, in 717, at the age of seventy-nine lunar or Arabian years.


MUSA, ABU ABDALLAH MOHAMMED BEN, of Khwarazm, the earliest Arabic writer on algebra, whose treatise on that science, 'Al-Jebre el Mokalalah (restoration and reduction), was composed for popular use at the command of the caliph Al Mamun. It contains rules and illustrations (rather than demonstrations) for the solution of simple and quadratic equations, with their application to various questions, mostly of a mercantile character. From internal evidence it appears to be drawn from Hindu writings, with which the author is known to have been acquainted; and the works of Diophantus were not translated into Arabic till after the time of Mohammed Ben Musa.

This work was (partially at least) translated into Latin at an early period; and M. Libri (Hist. des Sci. Math. en Italie, vol. i, note 12) has printed all the part of Ben Musa's treatise which the Latin manuscripts in the Bibliothèques de Paris contain. The complete work, in Arabic, with an English translation and notes by the late Dr. Rosen, was published by the Oriental Translation Society, in 1831, from a manuscript in the Bodleian Library.

It is from this work that (so far as Europe is concerned) algebra derives both its name and introduction; and the writings of Leonard Bonacci, Lucas di Burgo, and the earlier Italians, bear strong marks not only of their Arabic masters, but even of the particular work before us. Accordingly Mohammed Ben Musa was frequently called the inventor of Algebra, a title to which he has no claim.

In our account of the Viga Gansita a comparison is made of the Arabic algebra, as far as it goes, with that of the Hindus.

MUSA, ANTONIUS, was a physician of some celebrity at Rome. He was at one time the medical attendant of the emperor Augustus, whose slave he had formerly been; and he gained considerable reputation by the benefit which he obtained from his famous for arthritis pains, which had been unsuccessfully treated with warm applications. Musa ordered him cold fomentations, and some other means equally contrary to his previous prescriptions. He prescribed a similar remedy for Herpes (Epist., i, 15).

MUSA, a name given to a genus of plants having edible fruit in tropical countries. They consist of herbaceous plants, having a gigantic simple stem, thickly clothed with the sheathing petioles of long, broad, horizontal leaves, which form a tuft, like that of some palm, on the apex of the stem. These leaves are of a firm but thin texture, and are undivided; but having simple veins running directly from the margin towards the midrib, and presenting a broad surface to the wind, they are always torn into broad strap-like divisions, which give them a compound appearance. From the midst of these leaves proceeds the inflorescence, consisting of a compound spike of great size, each of whose divisions is enclosed in a large bract or spathe, may, whether used in a raw or dressed form, be regarded rather as a necessary article of food than as an occasional luxury. In equatorial Asia and America, in tropical Africa, in the islands of the Atlantic and Pacific oceans, wherever the mean heat of the year exceeds 24 centigrade degrees (75° Fahrenheit), the plantain is one of the most interesting objects of cultivation for the subsistence of man. Three dozen fruits will maintain a person, instead of bread, for a week, and appears better suited to him in warm countries than that kind of food. Indeed the plantain is often the whole support of an Indian family. The fruit is produced from among the immense leaves in bunches,
weighing 30, 60, and 80 lbs., of various colours, and of great diversity of form. It usually is long and narrow, of a pale-yellow or dark-red colour, with a yellow fleshy flesh. But in form it varies to oblong and nearly spherical; and in colour it offers all the shades and variations of tints that the combination of yellow and red, in different proportions, can produce. Some sorts are and always are of a bright green colour. In general, the character of the fruit, of a European palate is that of mild insipidity; some sorts are even so coarse as not to be digestible without preparation. The greater number however are used in their raw state, and some varieties acquire by cultivation a very exquisite flavour. Of these the worst are, Psittac Syrangi, P. Tondo, and P. Gabba-Gabba, and the best are the round, soft, yellowish sorts, called P. Medja and P. Radja. Some cultivators at Batavia best of having eighty sorts. Rheede distinguishes fourteen varieties by name, as natives of Malabar. In Sumatra alone twenty varieties are cultivated, among which the Ang Amas, or small yellow plantain, is esteemed the most delicate, and next to that the P. Raja, P. Dingen, and C. Kallt. In the West Indies, plantains appear to be even more extensively employed than in the Eastern world; and the modes of eating them are various. The best sorts are served up raw at table, as in the East Indies, and have been compared for flavour to an excellent reenette apple after its sweetness has been condensed by keeping through the winter. Some are even in their state of skin, and they then taste like the best stewed pears of Europe. They are also the principal ingredient in a variety of dishes, particularly in one called mantega, which is made of slices of them fried in butter and powdered over with fine sugar. Of the many cultivated sorts, that called by the French La Banane muscade is considered the best; it is less than the others, but has a more delicate flavour. There are uncoloured figures of the plantain fruit in Rhede's Hortus Malabaricus,' vol. i., plates 12, 13, and 1�4; and coloured ones in Tussac's Flore des Antilles,' plates 1 and 2. All hot climates seem equally congenial to the growth of this plant: in Cuba it is even cultivated in situations where the thermometer descends to seven centesimal degrees (45 Fahrenheit) sometimes nearly to the freezing point. There is a hardy variety called Cambur, which is grown with success at Malaga. The plantain prefers a rich fat soil; for in sandy places, where it flowers abundantly, it produces no fruit. In the climate it is a two-fruit plant, more extensively useful, independently of its being an indispensable article of food. A tough fibre, capable of being made into thread of great fineness, is obtained from its stem; and the leaves, from their breadth and hardness, form an excellent material for the thatches of cottages. An intoxicating liquor is also made from the fruits when fermented, and the young shoots are eaten as a delicate vegetable. The banana of hot countries is a mere variety of the plantain, distinguished by being dwarf, with a spotted stem and a more delicate fruit. Botanists call it Musa paradisiaca, in allusion to an old notion that it was the forbidden fruit of Scripture: it has also been supposed to be what was intended by the grapes, one bunch of which was borne upon a stem; and that the grapes of the Promised Land were brought out of the Promised Land. The only argument of any importance in support of the latter opinion is, that there is no other fruit to which the weight of the fruit of Scripture alludes. All the genus is Asiatic; the wild plantain is found in the forests of Chittagong, where it blossoms during the rains; Musa coccinea, a dwarf sort, with a stem not more than three or four feet high, is found in China; M. ornata and the forests of Java; M. gigantea from the Philippines, where it furnishes the valuable thread called Manilla hemp. There is also in the gardens of England a plant called M. Corentia, not above three feet high, and fruiting abundantly at that size, the origin of which is said to be the Isle of France.

MUSACEÆ are a natural order of Endogena, of which the last genus is the representative. They are generally stately and always beautiful herbaceous plants with the aspect of a plantain, and with large bracts or spathes, which are usually coloured of some gay tint. The characteristic marks of the order are to have an inferior ovary, with very irregular and unsymmetrical flowers, whose sexual apparatus is not consolidated. It is chiefly by these distinctions that it is known from Amaryllidaceae. In some the fruit is fleshy, as in the plantain; in others it is dry and capsular, and only genera are known of this order; all consisting of species of striking beauty. The Heliconias are the principal American form, nearly all the others being found in the Old World; of these the species are conspicuous for their brilliantly coloured rigid bracts, and only a few of them are more or less a mixture of both. The Stratiotes are Cape plants with rigid glaucous leaves, and singularly irregular flowers of considerable size, coloured yellow and blue, or pure white. Finally, the Ravenala of Madagascar, Uronia speciosa, a noble palm-like plant, is remarkable for the brilliant blue colour of the lacerated pulp aril which envelopes the seeds; the latter are used for dyeing in Madagascar, but none of the order are of any important use to man, with the exception of the Musas themselves.

MUSÆUS. Two, if not more, Greek poets of this name are known. 1. The eldest of them lived in the mythic ages of Greece, and is said to have been by birth an Athenian, and the son, or at least the disciple, of Orpheus. Plato and Hermesianax, in a passage quoted by Athenæus (xiii. 597), state him to have been the son of Selene, or the moon. Diogenes Laertius says that he was buried at Phæacia, and mentions his epitaph. His works, which are lost, have been quoted by Plato, Philostratus, Pausanias, Clement Alexanderius, and other antient writers: they consisted of religious hymns, a poem on the war of the giants, a theologusy, a work on mysteries, and moral precepts to his son. A few scattered lines, gathered from the quotations of the above writers, were inserted by Henri Estienne in his collection of philosophical poetry. 2. Musæus, styled the Grammarian in the MSS., is the author of the very interesting Greek poem entitled 'Hero and Leander.' The age in which the author lived has been a subject of much dispute. Scaliger, against all probability, ascribed the poem to the Museus of the mythic ages. The most general opinion is, that he lived in the later ages of the Roman empire. Schrader, Schoell, and other critics suppose him to have lived in the fifth century of our era, and to have been a contemporary of Nonnus, the author of the 'Dionysiac.' (Schrader's Preface to his edition of Museus, Leuwarden, 1742.) The poem of 'Hero and Leander' was first discovered about
the thirteenth century. It consists of 340 hexameter lines, which contain the whole account of the beginning of the love of Leander and Hero, the fatal drawing of the former in swimming by night across the strait from Abydos to Sestos to visit his mistress, and the tragical end of both lovers. Ovid has treated the same subject in Latin verse in one of his Heroides, in which Hero writes to Leander to urge him to swim across the Hellespont, as formerly, although the winter had set in, and yet at the same time expresses her fears of his risking his life. The story appears to have been an old tradition of a real fact.

The poem of Musæus has been a favourite with scholars, and has been repeatedly published, commented on, and translated into various languages. Heinrich's edition, Hanover, 1793, and Schäfer's edition, Greek and Latin, Leipzig, 1825, which is an improved republication of Schäfer's edition already mentioned, are among the best. The poem has been translated into Italian by Salvini, Pompei, and others; French by Marot, Gail, and Mollevan, Paris, 1805; English, with notes by Stapylton, in 1485, and again in 1797; and into German by Passow, Leipzig, 1810.

MUSÆUS, JOHANN KARL AUGUST, the admired author of the 'Volkmärchen der Deutschen,' or 'Popular Legends of Germany,' was born at Jena in 1735, in which university he studied theology with the intention of taking orders, but did not do so. His first literary production, which appeared in 1760, was his 'Grandison the Second,' a parody on Richardson's celebrated novel, at that period extravagantly admired in Germany. This satirical performance was so well received as to pass through several editions, and he, in his own bosom, and with some degree of celebrity for studies. At length, after an interval of eighteen years, he published his 'Physiognomical Travels,' intended, if not as a satire upon Lavater's system, to correct by wholesome ridicule the extravagant and absurd in what his countrymen had fallen. The success of this work induced him to throw off his incognito and avow himself the author; whereupon he became the literary idol of the day, and was for awhile an object of attraction to 'lion-hunting' visitors anxious to have a sight of the retired schoolmaster who had mystified them by his pleasantry. This sudden acquisition of celebrity and importance had no other effect upon Musæus than to encourage him to proceed. Accordingly, he forthwith set about his 'Volkmärchen,' which were actually what they professed to be, that he is said, while entertaining his, he had collected all the stories of the kind he could, from old women at their spinning-wheels, and even from children in the street. But if this circumstance in some measure deprives him of the merit of invention, the fascinating charm of narrative with which he has endowed such homely material, as the humour and naiveté which he imparted to them, were all his own. The success of these popular tales was complete, for they have become a classical and standard work of their kind, while a legion of original romances and novels, all favourites with the public for awhile, have now sunk into utter oblivion. His next production was that entitled 'Freund Heins Erscheinungen,' in Holbein's Manier,' a kind of literary 'Dance of Death' (Freund Hein being a peculiarity in his personification), of a series of moral and satirical sketches, he shows how many human projects and follies are suddenly cut short by the welcome yet inevitable visitor. Excepting a collection of 'tobacco-nutters' entitled 'Straßfedernd,' and another of the use of children, 'Freund Hein' was literat work, he himself had his summoms from him about two years later, October 28, 1787.

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MUSCAT, or MUSKAT. [ARABIA.]

MUSCHELKALK. A calcareous rock interposed in the midst of the new red-sandstone system, receives this name in Germany, and though it is not more carboniferous than some other limestones, yet it is much richer in organic remains than the average of the strata with which it is associated. This rock occupies a considerable space in the vicinity of the Harz, Schwarzwald, and Vosges Mountains, but is unknown in the British Isles, though several small bands of calcareous rock interlamine the variegated clays of the red-sandstone system. Brown ('Lithaea Geognostica') presents the following synopsis of the strata in this formation, as it appears on the flanks of the Black Forest:

Keuper formation.

I. Dolomite.

II. Limestone.

III. Anhydrite.

IV. Wellenkalk.

Bunter Sandstein.

The fossil remains of the muschelkalk participate in the more common species of the Bunter sandstein below, and the Keuper above; but among the peculiar species may be reckoned Euncerus moniliformis and Ammominites (certalis) nolosus. Saurian reptiles occur in this rock.

MUSCO, or MOSSES, constitute a group of cryptogramic or flowerless plants, of considerable extent and of great interest on account of their very singular structure. They are in all cases of small size, extending a few inches in height, and though often of almost microscopic minute-ness, are furnished with leaves arranged over a distinct axis of growth, and are propagated by means of reproductive apparatus of a peculiar nature. They have no trace of spiral vessels in their tissue, but are formed entirely of cellular tissue, in the stem lengthened into tubes. For long time they were thought to be destitute of a breathing apparatus, but the apertures through which this function is performed have at length been discovered by Treviranus and Unger, and especially by Mr. Valentine. ('Transactions of the Linnean Society,' vol. xviii., p. 239.) It is however remarkable that they should be confined to the organs of fructification, and not found on those of vegetation.

The organs of fructification are of two kinds: the most universal and most conspicuous is the urn (sporangium, or theca) in which the spores, or seed-like bodies, are generated. If the axis of the leaves of a moss is examined at the proper season of the year, there will be found in some of them clusters of articulated filaments swollen at the base, from among which some one will be larger than the remainder, and go on growing while they are arrested in their development. After awhile this body is found to have an exterior membrane covering, which separates from the base by a circular incision, but which otherwise adheres to the part beneath it. The latter, which is the young urn, gradually acquires a stalk, called the seta, upon which it is elevated above the leaves, carrying the outer membrane upwards on its point, so that when it is covered by it as with a cap; then called a calyptra. The urn itself is closed by a lid, or operculum, and contains the spores arranged in a cavity surrounding a central column, or columna. Its rim is bordered by a double row of organs, DIGITALIZED BY Google
often resembling jointed teeth, and called the peristome; one set of which appears to belong to the outer shell of the urn, and the other to the inner. Usually the urn grows from a fleshy tubercle called the apophysis, the station of which is in most cases at the base of the seta, but in Sphagnum it forms a curious process at the apex of the seta, immediately below the urn.

In some mosses there occurs organs of a second kind, by some supposed to be male, but whose use is really unknown, to which the name of *antheridia* or *staminidia* has been applied. These are also found clustered in the axis of leaves; they consist of membranous, cylindrical, jointed or jointless bodies, irregularly opening at the point, and discharging a mucous turbid fluid; they are surrounded by paraphyses, or jointed filaments, like the urns themselves.

When the spores of mosses germinate, they produce a jointed filament from any part of their surface, of which one part rises upwards, forming the beginning of a stem, while the other is directed downwards as a root; from the axis of the branches of the stem-filament the leaves are eventually developed.

The genera of mosses are principally characterised by peculiarities in the peristome, or by modifications of the calyptra, and of the position of the urn. Linnaeus admitted very few genera, but modern muscologists have elevated the number to more than 120; concerning the goodness of which there is however some difference of opinion. In the most recent enumeration of the genera the older order *Muscis* is broken up into three; of which *Andreaeae* have an urn splitting into four valves; *Sphagnaceae*, a valveless urn, a calyptra separating in the middle, and a decided ring surrounding the peristome; *Bryaceae*, a valveless urn, a calyptra separating at the base, and a ringless peristome.

Mosses are among the first plants that spring up on the surface of organic matter, at first appearing like a green stain, when they merely consist of germinating spores, but soon clothing themselves with leaves and then by the decay producing the earliest portion of decomposed vegetable matter with which the soil is fertilised. (Bridel, *Bryologia Generales*; Hedwig, *Theoria Generationis, &c. Plantarum Cryptogamicarum*; Endlicher, *Genera Plantarum*; Hooker and Taylor, *Muscologia Britannica*.)

**MUSCICA/PIDAE, Flycatchers;** a family of insectivorous birds, so named from their mode of taking their prey. Thunberg* states, in the *Gobe-mouches* (Gobe-mouches) food entirely on flies and other winged insects, which they catch as they fly (Manuel d'Ornithologie); and our countryman White says, 'There is one circumstance characteristic of this bird (the Spotted Flycatcher, Muscicapa striata) which seems to have escaped observation; and that is, it takes its stand on the top of some stake or post, from whence it springs forth on its prey, catching a fly in the air, and hardly ever touching the ground, but returning still to the same stand for many times together.' (Nat. Hist. of Selborne.)

Linnaeus, in his last edition of the *Systema Naturae*, places the genus *Muscicapa*, containing the true flycatchers, the *Tyrants* (*Muscicapa Tyrannus*), and several other species among the *Muscis* of twenty-one, between the genera *Fringilla* and *Motacilla*.

Cuvier places the *Gobe-mouches* (*Muscicapa, Linn.*), between the *Pie Griechs* (Butcher-birds, Lanius, Linn.) and the *Collireia* (Ampeia, Linn.).

The genera of the group are divided according to the bill depressed horizontally, and furnished with hairs or vibrissae at its base, and its point more or less hooked and notched; and he makes the Flycatchers consist of the *Tyrants* (*Muscicapa, Linn.*); the *Mouchoners* (*Muscicapa, Cuv.); the *Ptychopanthera*; the broad bills; certain *Ptychopanthera* on the legs and with a short tail; (Turdus auritus, Gmel.); *Conotrupes*; *Violiol*: the *True Flycatchers* (*Muscicapa, Cuv.*); and various other variations of form, principally in the bill, which becomes more slender in some, thus approximating to the Tyrants, and, in others, has the *arista* a little more elevated, whilst it is curved towards the point, thus leading to Sículo. Cuvier finishes by observing that there are various genera or subgenera which come very near to certain links of the order Flycatchers, though they much surpass those birds in size, such as the *Gymnodontes* (Gymnodontes, Geoff.), and *Cephalopterus* (Geoff.). (Coracina, vol. viii, pp. 4, 5.)

M. Temminck places his genus *Gobe-mouch* (*Muscicapa, Linn.*) between the *Lamius* (Linn.) and *Taurus* (Linn.).

M. Vieillot places the *Myothorax* or *Flycatchers* between the *Chlidonias* (Swallows and Goutackers) and the *Colisirion* (Butcher-birds).

Mr. Vigors, at the commencement of the section treating of the order *Dentirostres*, observes, that the depressed bill and insect-fool of the Todidas introduce us at once to the *Muscicapa*, with which they are immediately connected by the genus *Ptychopanthera*, Desm. The species that compose the latter group were, he remarks, originally indigenous to the genus Todas, and were separated from them only on account of the comparative strength of their legs. 'The whole of the *Muscicapa*, indeed,' continues Mr. Vigors, 'with which family *Ptychopanthera* is now united, have a decided affinity to the last tribe, or the birds which feed upon the wing, in their broad-based bills, the lower elevated, surround them, and their similar habits of darting upon their prey while on the wing. Separated from them chiefly by the strength and more perfect structure of the leg and foot, they form the extreme of the suborder, in which they are numbered in consequence of these distinguishing characters. The line of affinity between the two tribes may thus be assumed as established.' Mr. Vigors then states that the families composing the order *Dentirostres* appear to succeed each other as follows:— *Muscicapa*; *Lamius*; *Motacilla*; *Sylvia*; *Ptychopanthera*; *Merulida*; *Sylviidae*; *Ptychopanthera*. These families are thus grouped by him in their typical disposition:
He further remarks that the Muscicapa consists a multitude of species, diffused over every quarter of the globe; and differing in many points of generic distinction; but hitherto ill-defined, and so unsatisfactorily grouped, that any attempt to trace them in detail through their affinities in their present confusion would be hopeless. They are all, however, he adds, well united together by the essential characters which distinguish the type of the group—the notched, downward-waxing bill, which feed exclusively upon the wing: the bill is always considerably depressed or flattened, particularly at its base; and the sides of the mouth are defended with stiff bristles, to confine the struggles of their prey.

Mr. Swainson thinks that the primary divisions appear to be represented by the genera Eurylaimus, Muscicapa, Hucicola, Pauris, and Querula, and these, according to his views, constitute the types of so many subfamilies, very unequal in extent and distribution, but yet blending sufficiently into each other to point out their circular succession. He considers the first two of these to be the typical and subtypical groups; and the next three to be aberrant.

The Prince of Munniano's Geographical and Comparative List places the Muscicapa between the Turdidae and the Lanidae; and he makes the Muscicapa consist of the following subfamilies and genera.

a. Muscicapa.


b. Vireo.


In considering this arrangement, the student should remember that it only applies to the birds of Europe and North America.

Mr. Swainson thus defines the family:—

Those small, with very considerably depressed its entire length, broad: the edge of the upper mandible folding over that of the lower; the tip abruptly bent and notched. Rectus wide, defended with strong rigid bristles pointing forwards. Feet almost always short (except in the rasorial groups) where of course they are longer, small, and weak. Feed solely upon insects captured during flight. Habits sedentary.

Subfamily Querulinæ.

Bill strong, broad, much depressed; gape wide. Rictus with strong bristles. Feet short, resembling those of the typical Ampelinae. Lateral scales minute. (Sw.)

Mr. Swainson is of opinion that the genus Querula is the type of this family, and he enumerates that by some of the Linnean writers this remarkable bird is classed as a Muscicapa; while others, even among the moderns, it is considered an Ampelina; and he thinks that both of these opinions may be reconciled, by viewing it— as it stands in his arrangement— as the connecting link between these families. He remarks that all the other Flycatchers, according to his system, so far as we yet know, feed entirely upon insects; but there is unquestionable testimony that this species lives also upon fruits, thus uniting in itself the characteristic of the two families which it connects. In the bill, he adds, there is much of the form and strength of that of Pauris, but it is wide and more depressed; whilst the stiff bristles at the rictus betray its insectivorous habit: the feet are remarkably short for the size of the bird, and are calculated like those of the Ampelinae. As to the characters, in the opinion of Mr. Swainson, not only point out this genus as the fissirostral type, but perfect the union of the families of Muscicapa and Ampelinae.

Genera.

Querula, Vieill. and Lathria, Sw. Of these we select the former as an example.

Generic Character.—Bill large, broad, and strong. Gony long and straight. Nostrils concealed by incumbent reflected feathers. Wings long and broad, fourth quill longest. Tail unequall; inner toe shortest, of equal length with the hind toe. Tail even.

Example, Querula rubricollis. The Common Phaiau.

Description.—Black with a purple throat. It is the Muscicapa rubricollis of Gmelin.

Locality and Habits.—America, where they go in troops in the woods in pursuit of insects.
Mr. Swainson (who gives the above as the characters of the subfamily to which, in his opinion, Alectura immediately leads) states that in the Psarines there are but three ascertained genera. "These birds," says Mr. Swainson, "like their representatives, Monarcha and Psaritana, depart considerably from the types of this family: the bill is less depressed than in any other of the flycatchers, and its structure is altogether stronger and thicker; they are all natives of Tropical America, and are generally found only in thick forests. Gubernatrix is the genus by which they appear to be connected with the waterchats, through the medium of Alectura. One species only is yet known, the Gubernatrix forficatus, remarkable for its long forked tail; to this succeeds Psaris, where we find nearly all the species coloured alike; that is, they are more or less of a golden or pearl white, with black head, wings, and tail: they remain us immediately of the gulls, and this analogy is one of the most beautiful, when worked out, in the whole family. The smaller birds of the genus Pachyrinchus immediately follow. Two or three already prepare us for the next section (Querulinae), by the great depression of their bills, and the singularly formed red feathers on the throat." (Classification of Birds, part iii.) In the Synopsis (part iv.) only two genera are given, Psaris, Cup, and Pachyrinchus. Spirit. Of those we select an example.

Generic Character.—Bill large. The rictus smooth, often naked round the eye. Wings lengthened; the first quill equal or longer than the fourth. Tail short, even. Inner toe shorter than the outer. (Sw.)

Example, Psaris Cayennensis.

Description.—Ash-coloured: head, wings, and tail black. This is the Lanius Cayennensis caeruleus of Brisson; Lanius Cayennensis Linnaeus and Gmelin; Pie grise de Cayenne Buffon; Cayenne Shrike of Latham; and is the type of Cuvier's genus Psaris.

Locality and Habits.—South America. Cayenne particularly. Cuvier says that its manners are those of the Shrikes.

Fluvicoline.

Legs formed for walking. Tarsi lengthened, strong. Inhabit the sides of marshes and rivers in Tropical America. Seicurus alone is Australian. (Sw.)

Mr. Swainson states that the Fluvicoline, or waterchats, with the exception of one genus, whose situation is still somewhat doubtful, are entirely restricted to the latitudes of America, where they seem to represent the stonechats and the wagtails of the Old World. 'They are,' continues this author, 'strictly ambulating Flycatchers, and constitute the personal division of this family. The legs are consequently very long, and formed especially for walking; the toes are also long, quite divided to their base, and furnished with long and slightly curved claws. This structure enables these birds to run with great celerity; and they are generally seen on the sides of streams and rivers, feeding upon flying insects which resort to such situations for they never hunt among trees, and rarely perch; such at least are the manners of the typical species; but there are of course various modifications of habit, corresponding to those, which will now be glanced at, in their structure.' Mr. Swainson exhibits some variation in his views as to this group in the third and fourth parts of the Classification of Birds. In the third part the first genus, with which he begins the series, is that of Seicurus, differing only from Rhytidura by its more lengthened bill and feet: indeed he does not feel satisfied that Seicurus is naturally separated from Rhytidura, although, for the present, he adopts the group as proposed by Mr. Vigors and Dr. Horstel. He nevertheless expresses his suspicion that all the genera of the Fluvicolina are to be natives of Tropical America and that Seicurus is only composed of aberrant species of Rhytidura which pass into the Fluvicolina. Both these divisions (Seicurus and Rhytidura), as well as that of Sylirostris, have broad fan-shaped tails, which, he observes, plainly indicate the type to which they belong, although the rank they respectively hold cannot, in our present state of knowledge, be clearly ascertained. 'Leaving this group,' says Mr. Swainson in continuation, 'we reach that of Fluviocola, by means of certain black and glossy birds of Brazil, some of which have distinct crests; these latter conduct us to the typical Fluvicolus, having the legs unusually long, the bill depressed, the tail lengthened, and the plumage differently variegated with white and black. One of the most characteristic of these singular birds is the Habits—

Pariinae.

Mr. Swainson, in the third part of Mr. Swainson's "Classification of Birds," the subfamily of the following order—Eurypelmeni, Muscicapa, Phyllobates, Parininae, Querulinina. In the fourth part ('Synopsis') they are thus arranged—Querulinina, Parinina, Phyllobates, Muscicapa, Bergmannia.
having a general resemblance to the foregoing, which would seem to enter among the waterbirds; yet, as we have not sufficiently analyzed the group, we must leave this point undefined: among these are the white-headed tody of the old writers, which is either a Tyrannula or an aberrant Fluvicola, as well as the Muscicapa leucocilla of Hahn, which, in outward appearance, so much resembles a manakin, that it may possibly prove a representative of that family in the present circle. In the fourth part the sub-family is made to consist of the following genera, arranged in the order here given—

**Gubernetes, Vig.** Alceptrurus, Vieill. Fluvicola, Sw. (with its subgenus Blechopus, Sw. Pappaza, D'Azar.). *Setura,* Horst. and Vig. *Perspicilla,* Sw. Of these we select **Gubernetes.**

**Generic Character.**—Bill thick, subdepressed, raised at the base, culmen rounded; upper mandible slightly notched at the apex; nostrils rounded; the rictus furnished with close-set rigid vibrissae. Wings moderate; quills, from the 1st to the 5th nearly equal, the first the shortest, the second the longest; the external beards (pogonios), except the beards of the first feather, notched in the middle; internal beards entire. Feet with moderate tarsi; the acroteria and parateria scutellated; soles reticulated with oval scales. Tail very long and forked. (Vig.)

Example. **Gubernetes Cunninghami.**

**Description.**—Ash-coloured, longitudinally lineated with brown, throat and rump white, lunulated pectoral band purplish-brown, wings and tail brownish-black; quills longitudinally banded with ferruginous.

while in Paris they are scarcely perceptible. The tarsi, though somewhat weaker than those of *Pears, are in a slight degree weaker, while the toes are longer and stronger. The lateral scales of the tarsi are square and far asunder, while in *Pears they are rounded and numerous. The hinder scales also are less rounded, less close, and less conspicuous than in the latter genus. (Zool. Journ., vol. ii.)

**Muscicapina.**

Feet weak, formed only for perching, generally short (excepting in *Todus), but always very slender, and often syndactyl; Bill more or less depressed. Gape with stiff bristles. Claws small, considerably curved. Lateral toes unequal. Inhabitants warm and tropical latitudes, but excluded from North America. (Sw.)

This extensive subfamily contains the ordinary Flycatchers, the generality of which to not exceed the dimensions of *Muscicapa grisola.* Mr. Swainson remarks that the bill, although it is so broad in the *Eurystominae,* is much more flattened, and the bristles at the gaps are more developed. Their whole structure also, continues Mr. Swainson, is more slight and delicate; but their colouring, although sometimes elegant, is almost devoid of vivid tints. The different form and length of the bill and feet furnish the characters by which the genera and subgenera are distinguished; while the species, which are exceedingly numerous, with the exception of the genus *Todus,* are only found in the Old World. The typical genera are *Todus* and *Muscicapa,* or *Megapodus, Muscicapa, and Rhipidura:* the two first are so numerous in species as to contain subgenera. Mr. Swainson then enters into a lengthened notice of the different genera and subgenera; exhibits the circle of *Todus,* which he considers to be complete with that of *Muscicapa,* and gives the following as a table, showing the comparison of *Todus* with the orders of birds, and the tribes of the Perchers.

This illustration Mr. Swainson considers to be perfect. (Classification of Birds, part iii.)

The genera and subgenera of the *Muscicapa* are, in the fourth part of the work last quoted, placed in the following order:

- Rhipidura, Horst. and Vig.; Monacha, Horst. and Vig.; Megalophas, Sw.; Todus, Auct. (with the following subgenera:—Conopophaga, Vieill.; Platyheynychus, Desm.; Todus, Linn.; Lepyburnus, Sw.; Platystera, Jard. and Selby; Muscicapa, Linn. (with the following subgenera:—Cryptolophus,* Sw.; *Muscicapa, Cov.; *Myiagra, Horsf. and Vig.; *Muscicapa, Linn.; and *Hyllofa, Sw.).

Our limits will not permit more than a selection of some of these forms, and we must confine ourselves in this article to an attempt to illustrate those of *Rhipidura,* *Todus,* and *Muscicapa.*

**Rhipidura.**

**Generic Character.**—Bill short, depressed, broad at the base, compressed at the apex, the culmen arched; upper mandible notched at the apex; nostrils basal, oval, nearly covered with bristles and plumules; rictus furnished with close-set bristles, and the mandible in length. Wings moderate, subacuminate; the first quill shortest, the second longer by twice, the third and fourth (which last is the longest) gradually longer. Tail elongated, patent, rounded at the tip. Feet moderate, slender; the acroteria and parateria entire. (Vig. and Horst.)

Example. **Rhipidura flabeliferia.**

**Description.**—Brown-black; superciliary and postocular spot, throat, points of the wing-coverts, and stems and tips of the tail-feathers white; abdomen inclining to ferruginous. (Vig. and H.)

This is the Muscicapa *Flabeliferia* of Gmelin; the *Fan-tailed Flycatcher* of Latham. Mr. Vigors and Dr. Horstfield remark that the figure of this species given by Dr. Latham has much more white on

- Substained for *Sericornis.*
the lateral tail-feathers than the bird described by them, but they add that the Dr. affirms that the species is subject to much variation.

Habits.—Mr. Caley, speaking of this species under the name of Fan-tail, says, 'There is something singular in the habits of this bird. It frequents the small trees and bushes, from whence it suddenly darts at its prey, spreading out its tail like a fan, and, to quote Mr. Caley's words, 'turning over like a tumbler, Pigeon, and then immediately returning to the same twig or bough from whence it sprung.' These actions it continues constantly to repeat. The skin is very tender; and it is difficult, after having taken it off the body, to restore it again to its proper shape.'

Localities.—Australia. Mr. Caley says that the species is very common about Paramatta, and he does not recollect having missed it at any period of the year. Gmelin, quoting Forster, gives New Zealand as the habitat.

**Rhupisurus flavelliferus.**

**Todus.**

Generic Character.—Bill lengthened, broad throughout, contracting suddenly at the tip, very flat. Bristles short, weak, or none. Tail short, very slender, rounded. Legs long, weak. Toes short; the outer more or less united to the middle one. Tropical America only. (Sw.)

Example, Todus viridis.

Description.—Bright-green above, whitish beneath; throat scarlet; sides rosy; lower tail-coverts yellow. This species appears to be the Rubecula viridis elegansissima, Green Sparrow, or Green Humming-bird of Sloane (Jam., vol. 2, p. 306; Ray, Syn. Append., p. 187); Todus viridis,pectore rubro, rostro recto of Brown (Jam., p. 476); Todier de St. Domingue of Buffon; the Green Tody of English authors.

Habits, Food, &c.—Sloane says of this specimen that the belly or stomach was pretty thick, and very well filled with cinices and small vermin of the like kind. It loves, he adds, melancholy places, and scarce will stir from any one till they take it. 'It is,' says Sloane in conclusion, 'one of the most beautiful small birds I ever saw.' Browne states that it is a very familiar and beautiful bird, and will often let a man come within a few feet, and look for minutes together at it, before it moves. 'It keeps,' he adds, 'much about houses in the country parts, flies very slow, and probably may be easily tamed.'

M. Lesson, who places the genus with doubt between Platyrhynchus and Myiagra, says that the birds composing the genus have the greatest approximations to the Kingfishers, near which, and in the syndactylious tribe, Cuvier has arranged them. M. Lesson is of opinion that they are united to the Kingfishers by his genus Todiramphus, though he at the same time observes that M. Temmineck admits only one Tody, viz. Todus viridis, placing it near Platyrhynchus and before the Moucharoles, an opinion which appears to M. Lesson to be well founded. The Todies, he adds, are very small birds of America, living upon insects which they catch in the mud or in the water. 'They are,' says he, 'in truth, water Moucharoles; their wide and flattened bill, furnished with asperities, or teeth, permits them to sift the mud and retain their prey: they also seek for small insects under the moss and on the banks of small streams.'

The bird is placed by Mr. Vigors among the Fisirostres.

Localities.—The Antilles.
been devourer of all the smaller fruits, has in most instances been mistaken for the present bird. The same author tells us that it is of rare occurrence in Scotland; Mr. Gould says that it is found throughout England and a portion of Scotland, wherever there exists a locality suitable to its economy. It quits us in September and October, having bred and brought up its young here. Mr. Temminck says that it is spread in Europe as far as Sweden, and that it is found in the temperate provinces of Russia; but that it is rare in Holland. Mr. Selby states that its summer or polar migration extends as far as Sweden and Norway. The Prince of Musignano (Specchio Comparativo) notes it as rare in the summer near Rome; and as found in Europe generally. (Geographical and Comparative List.) Mr. Gould says, 'The Spotted Flycatcher appears to enjoy a wide range over the continent of Europe, being generally dispersed from the border of the Arctic circle to its most southern boundary; and we have also frequently observed it among collections from India.' The nest, loosely constructed of moss, fibres, catkins of the hazel, or small twigs lined with straw and wool or hair and feathers, is often placed upon the jutting ends of beams and rafters in toolshouses, or other garden or farm buildings, whence its name of Beam-bird. The four or five eggs are greyish-white, with pale orange-brown spots. When the young are able to leave the nest, the parents lead them to some place where insects abound. There the young soon learn to capture their prey after the manner of the old birds.

The sexes are alike in plumage. The young, for a short time after they leave the nest, have the feathers tipped with yellowish-white, which gives them a mottled appearance. The chrip of this Flycatcher, its only note, is weak.

The five leading types have come to light, although only one example of the genera Seriophus, Platyctoma, and Platyctoma, are yet known. It may here be observed that notwithstanding the great width of the bill in all these birds, it is nevertheless much more convex above, and in some instances is even more raised on the culmen than any of the others; the feet also and the whole structure of the body are more robust. Hence, although the width of the mouth and the great size of the head would indicate this to be the pre-eminent typical group, yet all the other characters would place it as the typical. Seriophus is evidently the rasorial or crested type; and it departs considerably from the others by the only species yet known being very fond of fruits; this is in conformity with the strong and remarkable analogy it shows, even in its outward appearance, to the wax-winged canterers (Bombycilla).

The genera given by Mr. Swainson in the 'Synopsis' are — *Eurylaimus*, Hors.; *Cymirhynchus*, Vig.; *Platyctoma*, Sw. (both of which are placed by M. Lesson in his genus *Erola*); *Parectoma*, Sw.; and *Seriophus*, Sw. Mr. Swainson considers *Eurylaimus* to be the pre-eminent type; *Cymirhynchus* the subtypical type; *Platyctoma* the flisoral type; and *Seriophus* the rasorial type; by which last and *Megulopus regius* he considers that the *Eurylaimus* and *Muscicapine* are united. Of these genera we select *Eurylaimus*.

**Eurylaimus.**

**Generic Character.** — Bill broader than the head; under mandible very thin, particularly at the base. Nostrils basal, transverse, oval; the aperture naked. First quill slightly, second almost imperceptibly graduated. Tail short, rounded.
Raffles in the catalogue of a zoological collection made in the island of Sumatra under his direction, and communicated to the Linnean Society, we can also in some measure determine the range of this genus: "It extends," continues the Doctor, "from Sumatra eastward to Singapore, and thence south to the eastern extremity of Java near the Straits of Baly, where I discovered it in the year 1806; since that period I have not met with it again. We are indebted to Sir Stamford Raffles for the following remarks on the first species:—"It frequents the banks of rivers and lakes, feeding on insects and worms. It builds its nest pendant from the branch of a tree or bush which overhangs the water." I found it in Java, in one of the most distant and inaccessible parts covered with extensive forests and abounding with rivers and marshes.

MUSCLE is an animal tissue composed of bundles of soft and usually reddish fibres, endowed with a peculiar power of contraction.

The muscles are divided into two classes: the voluntary and the involuntary. The former class, those over which the will exercises a direct control, are subservient to all the actions by which the animal is placed in active motion; the latter class, which the will makes use of in the category of Java, and as in all the motions of the limbs, of speech, of the eyes, ears, &c., and they are therefore often called the muscles of animal life; the latter class, comprising those whose actions are connected with the internal and nutritive functions of the body, and are as a rule, is not imitable to or constant control, form the muscular system of organic life, as the heart, the muscular coat of the stomach, &c.

Each voluntary muscle is composed of a number of parallel or nearly parallel bundles, enclosed in coverings of cellular tissue, by which each is connected with and at the same time isolated from those adjacent to it. Each bundle is again divided into smaller fascicles similarly ensheathed, and so on through an uncertain number of gradations. All our arteries at the muscular fibre, the one of the muscles, the other of the system, and the only part which possesses characters common to the muscles of all classes of animals. The muscles being thus divided, each fibre or each fascicle may be regarded as a separate contractile unit, usually acting in concert with those adjacent to it, is capable of independent contraction; and the power of a whole muscle will thus be equal to the sum of the powers of its separate fibres, and will bear a direct proportion to their number.

The voluntary muscular fibre is of a cylindrical or prismatic form; its diameter (taking the average of the results of several observations) is 30 of an inch, and it varies in length in different muscles. Each fibre is enclosed in a sheath of cellular tissue, and the tissue is divided, externally, by transverse strie, by which it is at once distinguished from the fibre peculiar to any other tissue.

The muscular fibre is hollow, and contains a small quantity of glutinous fluid and numerous very minute filaments. The muscular fibres are enclosed by the cellular tissue, which is extensive, enclosed by the corpuscular system called the muscular system, or muscular coat of the stomach, &c.

In the involuntary muscles the fibres and fasciculi are not arranged in parallel lines, but the fibres are arranged in a series of fasciculi, or fasciculi of fibres or of the fibres of a separate connective tissue, which is more or less cellular in its structure.

All the muscles receive large arteries and veins from the trunks passing near to them, whose branches run in the cellular interseptae between the fasciculi, and at last an irregular network among the fibres. They receive also a large supply of nerves, probably more than any other organs in the body. Nearly one-half of the brain and spinal chord is for the supply of nerves. This is seen in the voluntary muscles, or through which their motions may be excited by other stimuli. The involuntary muscles are chiefly supplied from the ganglionic or sympathetic system of nerves. [Nerves.]

Chemically, the muscles are composed chiefly of a tissue. The common house-fly (Musca domestica of authors) affords a familiar example of this genus, and is too well known to require description. The larvae, called maggots, live in putrid substances.

Dr. Horsfield placed the genus among the Meropodides or Synactyldae.

MUSCIDAE, a family of Dipteraous insects of the subsection Athericerina. The insects of this family were for the most part included in the genus Musca by the older authors, and Muscae may be regarded as the typical group of the second great division of two-winged flies (the Brachocera), in which the antennae are short and composed of only three joints, and the joints of the palpi are reduced to one or two.

In the most recent work on Dipteraous insects the section Brachocera is divided into three groups:—first, the Tetrachota, in which the proboscis is composed of six setae in the females; the palpi are ovate and elevated in the males, conical and decumbent in the females, and adhering to the base of the setae; the third joint of the antennae curved.

The second subdivision, Tetrachota, is thus characterized:—proboscis composed of four setae; palpi generally adhering to the base of the setae; third joint of the antennae either curved or simple, with the stylet usually terminal; wings generally with four or five posterior cells.

In the third subdivision, Dichotoma, the proboscis has only two setae, the palpi are generally placed on the base of the proboscis, and the stylet is situated on the upper surface of the third joint of the antennae: the wings usually but one submarginal cell; three posterior cells; the anal cell is usually short, and there are sometimes no transverse cells.

The subsection Athericerina, which forms one of the subdivisions of the great group Dichotoma, is distinguished by the sucker being enclosed in the proboscis; the antennae having the last joint usually patelliform. In the Musciide the proboscis is always very distinct and susceptible of being entirely retracted within the oral cavity; the sucker is composed of two pieces; the stylet of the antennae is usually plumose to the apex; the body is short and tolerably broad; the eyes, in the male sex, are usually contiguous.

The genus Musca, as now restricted, contains such species as have the third joint of the antennae twice or three times as large as the second; the first posterior cell of the wings extends to the margin.

The common house-fly (Musca domestica of authors) affords a familiar example of this genus, and is too well known to require description. The larvae, called maggots, live in putrid substances.
of those parts of animals which are most exercised; though for cooking it is necessary to avoid the toughness of fibre which usually coincides with great strength and a large quantity of fibrine.

The colour of the muscles is dependent partly on the blood which they contain, but chiefly on a peculiar colouring matter, very similar to that of the blood, which is fixed in their tissue. Their colour is distinctly though remotely connected with the quantity and condition of red blood in the system, and its depth is one of the best signs of robustness and vigor. In the horse, which, of observing states, the muscles are more or less red, and the colour is deepest in the parts which are most actively employed, but pale and scarcely perceptible in those which have not been frequently exerted, and whose fibres have wasted away; in a word, the fibres which, by means of the states that the animal is subjected in a condition of great debility; hence the difference between red and white meats. In amphibion, which have less red blood than mammalia and birds, the muscles are usually pale; in fish, which have still less, they are white. This motion is necessary in whaling, and with far greater power than a smaller number of long straight fibres could. The strength of a muscle is very commonly increased by its fibres not running parallel to the line in which the muscle has to draw it to the part to which it is attached, but with various parts in that line. In many muscles the fibres and fasciculi are attached obliquely to one another or to both sides of a tendon, as the fibres of a feather are attached to its shaft; by this arrangement, though each muscular fibre contracts in its own direction, the general result of their action is to draw the part which they have to act upon from a position of rest, and much of the danger of their being ruptured is removed. There are indeed but few instances of rectilinear muscles in the body; in nearly all, the fibres are placed in some oblique direction, so that when they are all to draw the part to which they are attached; a plan by which, though individually they lose in active power, they gain in resistance, and by which a far greater number may in the same space be brought into action upon a given point.

An almost infinite variety of arrows can be made in the muscular fibres adapted to the special purpose which each muscle has to fulfill, whether it be chiefly strength of action, or rapidity or extent of motion; and all are guided to their proper ends by the laws of proportion, of which one is that where velocity is required, the fibres are increased in number and placed obliquely to the direction of the resistance; wherever extent of motion is more needed than strength, the fibres are long and run almost straight from one end to the other, so that the power of a great part of its force being lost in its being inserted obliquely on the lever which it has to move, or in the distance of the resistance from the centre of motion, or in the resistance which other muscles and the adjacent tissues, which have to be extended, present, &c. But it is constantly found that where power is lost, a corresponding gain of velocity or extent of motion, or of convenience and compactness of form, and readiness of action, is obtained.

MUSCLE, or MUSCULUS. [MYTH.] MUSES [Musae, in Latin; Mu, in Greek], the name of certain sister goddesses in the Greek mythology, who were supposed to preside over the arts of poetry and music, and the sciences of history and astronomy. The original conceptions of the Muses are found in various mythological characters, and in the human mind which prompts us to embody abstract ideas in a sensuous form. Such seems likewise to have been the origin of the Graces, Fates, Furies, and other mythological personages of that class. [GRACES.] In the instance of the Muses, we have a instance of the universal vanity and self-conceit of the human mind; their names are not simply individual goddesses, who were supposed to inspire men with these gifts. At first the Muses were said to be only three: Mneme, that is, 'memory'; Melete, or 'meditation'; and Aoide, or 'song'; and they resided of old on Mount Helicon in Boetia, a place consecrated by Pausanias to the poet Alcaeus, who were the daughters of Uranus and Gna, or the earth. Cicero (De Natura Deorum, iii. 21) mentions four, namely, Thelxinoe, 'mind-soother'; Arche, or 'beginning'; Aoide; and Melete; and he says that they were the offspring of the second generation of [DEITY].
He goes on to say that there were other Muses, nine in number, born of the third Jupiter (the son of Saturn) and of Mnemosyne; and also a third family of Muses, called Pierides, by the poets, who were the daughters of the third Jupiter and Antiope, and were similar in their names and order in number to the preceding. Hesiod, in his 'Theogony' (53), reckons nine Muses, daughters of Zeus and Mnemosyne, and gives their names in the following order: Calliope, Clio, Melpomene, Thalia, Euterpe, Terpsichore, Erato, Polyhymnia, and Urania, and he says that Pieria in Macedonia was their first dwelling-place. These are the Muses generally alluded to by the poets. It appears that the list of Muses was introduced from Macedonia into Boeotia, Phocis, and other parts of Hellenia. The story of the contest of the Muses with the nine daughters of Pierus, a Macedonian, who pretended to rival the Muses in singing, is preserved in the Odyssey, and is introduced into several other poems (Ovid, 'Metamorph.'). By some critics, as has been said, an allegory originating in the national vanity of the Greeks, to show how the Muses competed for their superior arts and sciences over their Macedonian neighbours. The Thracian bard Thamyris, the joyous of a like chance, with a like rebuff: he had his eyes put out and was deprived of his lyre.

Homer mentions the Muses as the goddesses of song, who inhabited lofty Olympus, but he does not specify their number or names. In the second book of the Iliad he invokes them all by name, but except in memory while he is enumerating the leaders of the Greek forces at Troy. The occupations of the Muses were singing, dancing, and attending the banquet of the Gods. They were the attendants of Apollo and also of Bacchus. They have the special province of poetry and the arts, their respective attributes, and with their respective names written under each. By comparing these with several rilieus, medallions, and mosaics, their identity becomes confirmed. (See Calliope, Clio, etc.)

Melpomene, 'the singer,' wears a royal diadem round her head, and a wreath of vine leaves, with cithern on her feet; a mask in one hand, and a club in the other. She was the Muse of Tragedy.

Thalia, 'the Muse of Comedy, is also crowned with vine leaves, has a crook in one hand and a grotesque mask in the other.

Euterpe, 'the pleasing,' carries a double flute. She presides over music and dance. As 'the dance-loving,' carried a lyre, and presided over lyric poetry and dance.

Erato, 'the lovely,' carries also a lyre. She was the Muse of elegy and amatory song.

Polyhymnia, 'of many songs,' is represented wrapped up in her cloak, and buried in meditation, with the finger of her right hand across her mouth, in token of reserve and caution. She was the Muse of religious song, allegories, and mystical strains.

Urania, 'the highest,' has the globe and compasses in her hands, which are the emblems of her calling, astronomy.

The corruption which, in the course of ages, pervaded mythological symbols, did not spare the Muses, and accordingly we find their chastity denied by several writers. Apollodorus, Pherecydes, Ovid, and others, Clod or Phereus by Apollo, Euterpe had Urania by the Bryonymus. Calliope was the mother of the Sirens by Achelous, &c.

The favourite haunts of the Muses were, Mount Parnassus in Phocia, Helicon in Boeotia, Pieria, Pinus, and Olympus, in Thessaly, &c. The swan, the nightingale, and the grasshopper were sacred to them. The Roman poets called the Muse Camenae, an Etruscan name—for it appears that the Etruscans had also their Muses (Micali), and also Pierides.

Crous, 'Ein Rätsel und Mythologie,' Petersen, 'De Museorum Origine,' in Münster's Miscellanea Hofiennse; Hermannus, 'De Musis fumilulosi;' Milun, 'Galerie Mythologique;' Keightley's 'Mythology of Ancient Greece and Italy.'

MUSEUM, a place dedicated to the Muses, from the Greek Mousion, 'a place where learning is pursued, or which is set apart as a repository for things that have some immediate relation to the arts, is so termed. The earliest institution we are acquainted with which received this appellation was the museum founded at Athens by Kroisos, in 530 B.C. (Hieron ii.) The name of this institution was afterwards enlarged by the emperor Claudius. (Suet, Claud., 42.)

MUSGRAVE, William, born in 1657, in the county of Somerset, studied at Oxford, where he took his degree of M.D. In 1689 he married any place where learning was pursued, or which is set apart as a repository for things that have some immediate relation to the arts, is so termed. The earliest institution we are acquainted with which received this appellation was the museum founded at Athens by Kroisos, in 530 B.C. (Hieron ii.) The name of this institution was afterwards enlarged by the emperor Claudius. (Suet, Claud., 42.)

MUSGRAVE, Samuel, M.D., the grandson of the above, also practised as a physician in Exeter, and died there in 1782. Besides a few works on medical subjects, he was the author of 'Exercitationes in Epirupidem,' 'Svo.' Leyden, 1762; 'Animalisiones in Sophocleum,' 3 vols. Oxford, 1765; and 'Tractatus et Observationes de Mythologie of the Greeks; 2, An Examination of Sir Isaac Newton's Objections to the Chronology of the Olympiads.' He also assisted in the edition of 'Bibliotheca,' 4 vols. Svo., Oxford, 1776. Schweighaeuser, in his edition of Appian, has cited many of Musgrave's emendations and conjectures on that author from the marginal notes in Musgrave's copy of Appian. Schweighaeuser justly calls him a good Greek scholar and an acute critic.

MSHOM. The species of mushroom usually cultivated is the Agaricus comestibua. In the order of fungi, which includes that plant, most species are poisonous, and fatal consequences have resulted from ignorance of the characters by which the wholesome mushroom is distinguished from the much allied species. In the list of fungi, the mushroom itself is the fruit. In this state the mushroom is kept for years in a moist atmosphere; but if the latter be supplied, in conjunction with a proper degree of temperature, it is further developed into white filaments and drooping branches which unite to form the fruit body of the mushroom, and is thus a state that is characteristic of the mushroom. These sprout sometimes singly, but frequently in a gregarious manner. Mushrooms are indigenous, but they spring up abundantly in woods where they have been brought to the Rosal and temperature prove favourable for the development of the spawn, a term which is applied to the substance in which the reproductive principle is embodied, which presents to the naked eye the appearance of whitish mouldiness, and which is also contained in the spawn of vegetable origin. Here the mushroom itself is the fruit. In this state the spawn may be kept for years if moisture be withheld; but if the latter be supplied, in conjunction with a proper degree of temperature, it is further developed into white filaments and drooping branches which unite to form the fruit body of the mushroom. These spring up sometimes singly, but frequently in a gregarious manner. Mushrooms appear in the fields chiefly after Midsummer, in the months of July, August, and most abundantly in September. On a ten years' average the temperature of these months respectively in the neighbourhood of London has been found to be 64°, 62°, and 57°; and in the same periods the temperature of the earth one foot below the surface is a few degrees higher; but at the depth of two or three inches, where the vegetating spawn is situated, the mycelial temperature in hot sunny weather is frequently as high as 80°. Whilst such hot weather continues, mushrooms are
rarely met with; but when the atmosphere changes to a humid state, and when the earth becomes sufficiently moistened and lowered in temperature, in consequence of rain and absence of sun-heat, to between 60° and 65°, mushrooms become plentiful. Hence it may be concluded that spawn will not be injured by a heat of 60° during what may be termed its underground existences which may occur; and the fact that spawn introduced into melon-frames when the beds are moulded, increases whilst the melons are grown in a heat of about 80°, and when the melon crop is over, the frame cleared, and the heat of the bed naturally abated, a gentle steam is produced, with a small piece of dampness is all that is necessary to bring up an excellent crop of mushrooms from the spawn so deposited. It is evident from what has been stated that the spawn requires a high temperature for its diffusion; but when this has taken place a declining temperature is requisite, till the whole of the solid pieces are converted into vapour, and the temperature of the air limited between 55° and 65°, when the production first appears above the soil.

With regard to moisture it may be observed that a dry atmosphere is injurious, not only to artificial crops, but also to the natural growth of mushrooms in the wild state. Mushrooms are most favourable, and these should be imitated as closely in cultivation as circumstances will permit. A gentle steam is more easily maintained in mushroom-houses than in structures adapted for other subjects of cultivation where light and heat are the principal requisites. It is necessary that the agency, and consequently a glass roof is unnecessary: on the contrary, the roof and walls where they are intended to be grown should be composed of such substances as will cause the least possible condensation of the internal vapours, and which are in other respects eligible for the purpose.

A thatched roof of a good thickness is very proper; a slated or tiled one is on the contrary objectionable unless a ceiling be formed under it. If the cavity between the ceiling and the external covering were filled with dry moss, a more complete protection would be formed against any sudden vicissitudes of cold and heat, an object of importance towards success either in the cold winter months or during the summer.

The materials of which beds for the growth of mushrooms are composed usually contain spawn; but as they may or may not happen to do so, it is necessary to be provided with some, in order that it may be introduced when the beds are in the least state formed for the purpose. Spawn may be purchased; or a small quantity having been prepared about old melon-beds, horse-tracks under cover, dry places where cattle usually take shelter, or elsewhere, it may be propagated by incorporating to the consistency of mortar a quantity of spawn such as are deposited when the spawn has been used, or become damp and last been taken from places where mushrooms have grown, so much the better. This composition, or in fact any one of a similar kind that may be equally adapted for a matrix wherein the spawn may extend itself, should be spread on a thin definition of mortar and covered with cakes, or formed into small flat bricks with one or two holes in each, into which portions of the previously collected spawn are inserted. The bricks should be in a firm state when the spawn is introduced, but not dry. The whole should then be formed for the purpose. If they are not too compact, some spawn soil being sprinkled on the strata are being deposited, if such can be readily obtained, and a covering of hot dung applied. In a short time the spawn becomes diffused throughout the mass; and whenever this is found to be the case it should be described as a bed in proper condition and allowed to dry; for the purpose of arresting the progress of vegetation in the spawn till it is required for use.

Various compositions have been successfully employed in the formation of mushroom-beds. Horse-dung, chiefly fresh droppings, or with only some of the shortest litter intermingled, is however principally esteemed; and such should be collected when the horses are not on green food, but are fed fed on corn, or on corn and hay. If the beds are supposed to be formed of considerable thickness, which some prefer, the compost may be watered long and allowed to dry, then it is proper that the fresh dung should be mixed with some old hot-bed materials, or with light loam, in such proportion as will prevent a too violent fermentation. In all the compositions the mixture must be kept sufficiently moist to induce fermentation. It may then be completely deposited in any dark situation where the temperature and moderate moisture of the atmosphere can be rendered congenial, either in boxes that are movable or in such as are fixed on purpose along the walls of a shed or garden. In the house, the construction of which may be that of any convenient form, provided its adaptation to the principles here mentioned be kept in view. The bed should not however be in immediate contact with the ground, unless under circumstances the latter to possess a temperature of between 60° and 65°.

It is desirable that the materials should not ferment higher than 60°; when slowly on the decline from this temperature, the spawn should be introduced by inserting small pieces merely within the surface of the bed, through which it will soon become diffused; and whilst this is being effected, a covering of rich loam to the depth of two inches is spread over the bed, which, as well as the whole of the materials, should be rendered very compact. Extremes of moisture are to be avoided. Waterings, when at all necessary, should be light; and it is particularly essential that the water should be of an equal temperature with the bed. A covering of hay and mats is very useful for preserving uniformity of temperature and raising mental tops, the effect of which may be seen by having the regulation of these conditions fully at command.

As wooden shelves or boxes are soon rotted by the dung, brick arches have been in some cases substituted; but these may very much spread! If the bed were a brick, then the brick would be a better material, since it can be had of almost any thickness; and the inclosing wall of a brick has a great deniability, whilst a wooden shelf properly regulated no condensation would take place, as for the materials of the beds are at least always as warm as the atmosphere of the house, and in generally more so, the air in contact with it being warmer, and consequently not liable to the above objection.

MUSIC (Musicque, Fr.; Musica, Lat.; Músik, Gr.) is the art of combining sounds in a manner agreeable to the ear—has been so generally received, and even adopted by those whose capacities and knowledge might have enabled them to take a much more enlightened view of the object, that few have not been convinced of its great value, and the pain with the sister art, becomes a highly ornamented kind of eloquence. Hence it will be seen that we widely differ from one who has been looked up to as an unquestionable authority, from the celebrated Rousseau, whose well-known definition of music—"Music is the art of combining sounds in a manner agreeable to the ear, or painting as the art of combining colours in a manner agreeable to the eye."—Music is a kind of language, and as such, says Metastasio, it possesses that advantage over poetry which a universal language has over a particular one; for one language speaks only to its own age and country; the other speaks to all ages and countries. James Harris, in his philosophical Discourse on Music, Painting, and Poetry, expresses the same opinion, and going a step further, says that while in description in words it has rarely any relation to the several ideas of which those words are the symbols, 'musical imitations are intelligible to all men.' Music is a language that speaks by imitating, and as such it is understood by those who are educated by it, and likewise by mere amators, who, with little if any knowledge of its principles, have learnt the meaning of its expressions by long practice, by frequently hearing and enjoying.
sounding it's performance; but it can only express passion and sentiment very generally, and commonly fails when it attempts to particularise. This want of absolute decision in what is called musical language is by some writers reckoned among its advantages, because it gives the hearer greater latitude in interpreting it, which he usually does in a manner as congensial as possible to his own feelings at the time. Madame de Stäcli, and she goes so far as to consider it to be a species of rudeness, on account of the vagueness which she thinks one of the attributes of the former—that very same vagueness which Fontenelle meant to impute to it as an egregious fault, when, in a transport of impatience, he exclaimed, 'I would fain believe that Rousseau was the first to have been entirely convinced with Madame de Stäcli's, if it did not actually prompt it. He says, 'the passions may be considerably operated upon, without presenting any image at all, by certain sounds adapted to that purpose, of which we have a sufficient proof in the acknowledged and powerful effects of instrumental music.' He however soon afterwards adds, that 'in reality a great clearness helps but little towards affecting the passions, as it is in some sort an enemy to all enthusiasm whatever. This is rather startling as a general proposition: if we admit it as applied to vocal music, we must, d'parti, allow that the finest compositions of that kind, which certainly leave nothing to the imagination of the hearer, exercise little if any influence over the passions. But being decidedly opposed to such an opinion, we must cast aside all doubt and follow a counsel of the Enquiry concerning the Sublime and Beautiful, and supported by the distinguished author of Alénagme. No one has written in a more enthusiastic strain on the power of music in imitating than Rousseau. The reader of his Dictionary will find little difficulty in believing all that is said of Orpheus and Aphephon, if he suffers himself to be convinced by the floral, declamatory, extrapageous passages to which we allude. The writer of the fourth Bridgewater Treatise, Dr. Chalmers, has argued no less earnestly in favour of that musical language of which we are speaking. 'Music,' he says, 'apart from words, is powerfully fitted both to represent and awaken the mental processes, insomuch that, without the aid of spoken language, it possesses the most important influence. What is most generally told, many a noble or tender sentiment is most emphatically conveyed by it. . . . The power and expressiveness of music may well be regarded as a most beauteous adaptation of external nature to the moral constitution of man.' If sweet sounds are those kind affections: its sublimest sounds are those most expressive of moral heroism, or most fitted to prompt the aspirations and resolves of exalted piety.' Fontenelle, on one side, and Rousseau, with Dr. Chalmers, on the other, are at this exasperation of the same line of reasoning, from a deficiency of musical feeling, granting too little; the others, from an excess of it, admitting too much.

A musical sound,—which is a curious compound of other sounds,—resulting, resembling, imitating, reproducing, substituting, imitations in equal times,—what produced by a fine voice, a rich-toned violin, or a 'mellow horn,' excites in all who possess a moderate share of nervous sensibility, a pleasurable sensation; and this, Sir John Herschel observes, 'is perhaps the only instance of separation for whose pleasing impression an distinct and intelligible reason can be assigned.'

Dr. Beattie does not think it absurd to suppose that the body may be mechanically affected by sound. 'If,' he says, 'its harmonized modes of movement be used harmoniously, not merely as tones of the organ; if one string vibrates of its own accord when another is sounded near it, of equal length, tension, and thickness; if a person speaks loud in the neighbourhood of a harp-chord, and often hears the strings of the instrument in some of the simultaneous sounds, the same result need not be expected, that some of the finer fibres of the human frame should be put in a tremulous motion when they happen to be in unison with any notes proceeding from external objects.' Most persons would consider the effect of a street-organ on some of the canine species, apparently wakened and put into a prodigious motion by the tones of the instrument; if, if not driven away, continue to howl all the while the instrument is playing. Whether they are painfully affected, and their tones those of distress, or agreeably, and they become more agreeable if the cause does not appear to be the probability that they would fly from the cause. But Dr. Mead tells us that a celebrated violinist of his acquaintance, perceiving that his dog betrayed symptoms of great suffering on hearing a certain passage performed, repeated it for some time, in order to try the result, and the experiment proved fatal to the poor animal, whose death at the feet of his master, where he had received all the most horrid convulsions. 'The surprising and hitherto unexplained connection between form and vibrations producing musical sounds, so beautifully shown in Chladin's experiments, has been repeated by the Gardiner, who produced considerable changes by throwing the sand into somberous vibrations, thereby throwing the sand into various symmetrical figures, may be here incidentally mentioned, though it does not now seem to shed any new light on the subject before us; nevertheless by proving something of the extraordinary kind that between two strings, in mere matter, it may at a future period lead to interesting discoveries.

The effect of Rhythm, or measure, is universally felt and admitted: the most polished inhabitants of Europe, and the most birds, the natives of Australia, feel it in their ears and its influence; it is that which reduces unmusical sounds to order, converts them into melody, and bestows on them proportion and a power to charm. The chattering, or whistling, or singing as it is called, of most birds, being devoid of rhythm, afforded no charm. Whether in its breath, phrases, or rhythm, it is the object of three senses, namely, the sight, in danger, of sound, in music; and the touch, as in the pulsations of the arteries.

Much of the effect of music on the mind is ascribed to Imitation, which is either direct or indirect. And it must be understood that what is most striking is instrumental, not vocal. The power of direct imitation is confined within very narrow limits indeed, though composers have often attempted to enlarge the boundaries, exposing their own weakness and that of their art. The song of birds, the natural voice of the child, of which Rousseau spoke so often, must be admitted much that it does not imply in modern language. Aristides Quintilianus, the best of the seven Greek writers on music collected by Moebius, remarks that 'Rhythm is the object of three senses, namely, the sight, in danger, of sound, in music; and the touch, as in the pulsations of the arteries.

Music is imitated in a direct manner only by its actual resemblance to the sound of the thing imitated. Of all the powers of music, in the opinion of an admirable critic, the Rev. Thos. Twining, that of raising ideas by direct resemblance is the weakest and least important. 'It is indeed so far from being essential to the pleasure of the art, that it is in the highest degree an injurious one. He who would destroy the pleasure by becoming offensive or ridiculous. The highest power of music, and that from which it derives its greatest efficacy, is undoubtedly its power of raising emotions.'
of sympathy or contagion.' (Enquiry into our Ideas of Beauty, &c.)

Pleas, in the third book of his 'Republic,' speaks of a want of air inspiring courage, because imitating the sounds and accents of the courageous man; and of a calm and sedate air producing tranquility and gravity, on the same principle. This leads us to the consideration of indirect imitation, to which part of our subject it perhaps more properly

Indirect imitation is that by which some quality common to music and the thing imitated is indicated by sounds, strong or weak, quick or slow. Rage is loud, anger is harsh, love and pity are gentle; therefore loud and harsh sounds indicate passions and the expression of the same class; and soft and tranquil sounds raise ideas of the latter and others of a similar character. Hence it will be seen, as before observed, that the hearer may interpret music in a manner corresponding in some degree to the state of mind in which it is given to him, but under certain restrictions from which he cannot be released. If agitated by any tur-

buck passion, he will find it impossible to convert smooth and delicate music into a language in unison with his irritated feelings; and if under the softening influence of some tender sentiment, or of sorrow for the loss of one beloved or revered, he will be unable to construe bold and brilliant sounds as expressions of sympathy. But music that is not of a decided character will prove more or less convertible. And in fact it is so widely circumscribed, that nowhere, probably, are the alludes, when, speaking of good instrumental music 'ex-pressively' performed, he says, 'the very indecision of the expression, leaving the hearer to the free operation of his emotions upon his fancy, and, as it were, to the free choice of such sounds, is the effect on no worse account than the heighten the emotion which occasioned them, produces a pleasure which nobody, I believe, who is able to feel it will deny to be one of the most delicious that music is capable of affording.' (Dissertation on the word Imitative, &c.)

It is quite possible that this vendor London, by suggesting tenor names, which, in times happily gone by, acted with such irresistible force on the expatriated Swiss soldier. It was many years after the battle of Culloden, and not even the blood of his countrymen that certain Scotch bagpipers ventured to play any of the Jacobite tunes, which, when revived, were heard with delight, though hardly one of them would have continued to be listened to but as connected with the history of the country. When Sibelius speaks of unapplied music of the sort of Melone— in compliment to the English gentlemen then residing there, the manager of the opera one night ordered the band to play an English ballad-tune. Happening to be the popular air which was played or sung in almost every street, just at the time of leaving London, by suggesting to them that metropolis with all its connections and en-

dearing circumstances, it immediately brought tears into the artist's eyes, as well as into those of his countrymen who were present. To compositions of a very ordinary kind, says Dr. Reynolds, had subsided, then the

'Ve have heard them,' he says, 'performed, some time or other, in an agreeable place perhaps, or by an agreeable person; or have heard them in our early years, a period of life in which we seldom look back upon without pleasure. Nor is it a neccesity of melody or harmony that should have much intrinsic merit.

If a song, or piece of music, should call up only a faint remem-

biance that we were happy the last time we heard it, nothing more can be needed to make us listen to it again with peculiar satisfaction. To this latter part, however, we can only give our assent generally; painful experience has taught many that there is an exception to the rule. A composition which had been listened to with unalloyed pleasure will go done to be possessed of our tenderest and warmest affection, only excites the idea of lost, of irre-
singing the anthem. 'Some eminent musicians,' Sir William Jones observes, 'have been absurd enough to think of imitating laughter and other noises; but if they had succeeded, they would not have made amends for their want of taste in it; for such ridiculous imitations must necessarily destroy the spirit and dignity of the finest poems.' This discerning and elegant writer most likely points at the song and chorus, 'Haste thee, nymph,' in Handel's setting of Milton's 'L'Allegro, il Penseroso;' which is the subject of this paper. The singers in this, it must be allowed, never baulk the intention of the composer, but affect to laugh almost convulsively. To carry out the design to its utmost extent, they should cast away their musical ideas, firmly planted in the hands, and bidding action to sound, complete the living picture. In another song by Handel, which was once very popular, in the oratorio of Semela is a remarkable instance of a mistaken attempt at imitation. The words are—

'The morning bell to mine accords.
And tunes to my distress warbling throat.'

These lines (foisted into Congreve's poem) are silly enough; but the composer has rendered them perfectly ludicrous, by one of those long-winded divisions which were the beginning of the age, on the word 'warbling.' In the midst of her distress, Semela and two fiddles—the latter representing the bird—strive who shall best mimic the sooting singer, till the lady is obliged to yield, from pure exhaustion. The mention of the lark has entraped many a composer into committing false fiddles to his muses innumerable. Handel's song, 'Sweet Bird,' from Il Penseroso, always has been, and most likely always will be, admired as music, and it affords an opportunity for the display of talent in the singer and the composer, without the canny care of the critics. The same objection exists to this as to the air just noticed; the divisions are in themselves absurd, but as imitations are still more so. Surely the composer must have been aware that the note of the nightingale is the simplest that is practised by the forenamed bird, yet he has given the melancholy bird sounds which, as regards variety, rapidity, and compass, only able performers can produce from a fine voice and a perfect instrument. Handel's supremacy in the art renders him especially to simulate vocal parts by numerous corruption of the words; but he has been charged with many supposed imitations which he never contemplated, such as the whippin-chorus, the rockin-chorus, &c. We have however said as much as is necessary on this point.

In the accompaniment to vocal music, much greater freedom of imitation is allowable than in the voice part: kept within those bounds which good sense and cultivated taste prescribe, it affords very efficient aid, by giving greater force to the music and contributions to the general design. It also adds harmony to song, a most important, if not an indispensable support. Nearly all that imitation can do, should—as the elder Dr. Gregory, of Edinburgh, in some admirable remarks on music has observed—be turned to account in the great compass and variety of instruments, are better adapted to such a purpose than the voice, which ought to be left at liberty to express the sentiments. If Handel has sometimes failed in imitations by the voice, he has often succeeded in those of the instruments. 'Oft on a point of rising ground' he hear the brook's sound.'—

where he has imitated the bell by the deep-toned strings of the basses, confining the voice to those notes of pleasing, contemplative melancholy, the idea of which the words so completely excite. The same skill and discrimination are shown in Handel's odes to the Galatea, 'Blinks my eye,' in which the flute imitates the birds, leaving the singer to express in simple sounds that languishing tenderness indicated by the poetry. Handel was the first who endeavoured to excite the idea of light through the agency of musical sounds: his chorus in the oratorio of Samson, 'O first created beam!' was written with this design; and moreover suggested to Haydn that grand composition on the same subject which is admitted to be one of his noblest triumphs. But the still bolder attempt of the former great master was to convey to the mind, through the instrument, a sense of darkness. With this he composed the sublime chorus in Israel in Egypt, beginning, 'He sent a thick darkness over all the land,' the accompaniments to which, assisted by the words, produce on persons susceptible of musical impressions a most solemn effect, of effect, not unmixed with awe, intended by the author.

Haydn, though sometimes ambitious of achieving by musical means more than the art can accomplish, was often most happy in indirect imitation by instrumental accompaniments. The words, 'Thus with a mighty hand,' which is the first chorus—to which we have just alluded—in The Creation, at the words, 'there was light.' Witness also his musical picture, in the same oratorio, of the rising sun, in the slow swell of the instruments in ascending scale, and the gradual unfolding of the horizon, and the full power of the band depicting its resplendent splendour. And how beautifully the composer contrasts with the solar blaze, the soft, serene beams of the comparatively slow rising moon that reflects its mother. Staal heard the first of these most masterly compositions performed at Vienna, in 'a manner,' she tells us, 'worthy of the great work,' and describes the sound of the combined voices and instruments as a terrible noise! She adds, that at the appearance of light itself, the audience fancy its first word one's ears. We forgive the bad taste for the sake of the wit. This generally sagacious and acute, and always brilliant, writer, is quite an Italian in her musical criticism: she says that the Germans put too much mind in their music, and it is too soft and too complex; the music of Mozart, whose illustrations of the poet are enumerated among his excellencies by most critics, Madame de Staal speaks in what we consider highly laudatory terms, but by which she means to express some degree of disapprobation. She thinks of 'the appearance of light itself' as 'marrying' the music to the words: that in his operas, especially Don Giovanni, he makes us sensible of all the effect of dramatic representation: that 'this ingenious alliance of the musician and poet gives us a sort of pleasure, but it is a pleasure which derives all its effect from reflection in the music, and does not belong to the wonderful sphere of the arts.' (De l'Allemagne.) The 'alliance' here complained of could not have been alleged as a fault in Rossini's earlier works, beautiful as some of them are in other respects; though the La Columbia, Sir John, seems too soft, too light, and does not, in three other things, offer as fine examples of what is meant by musical imitation as can be found. But in his second style—the manner in which his later operas are written—he seems to have been infected, as Madame de Staal would have said, by German intellectualism. We know not if the highly-talented lady whose judgment in music we have ventured to impugn was acquainted with the compositions of Weber; if she ever heard his Freischultz or Oberon, she was never so placed by any listener, as to be made to abhor the sound of music by rendering it expressive,—who, as Pope ironically says, in some lines complimentary to Handel,

—meanly borrow shy from sense.

Music, which is both a science and an art, is divided into Speculative or theoretical, and practical. Speculative Music explains the nature of musical sounds; shows, by demonstrating their ratios, how they are related to each other; and investigates their physical and moral effects when in a simple or in a combined state: it is, in few words, the science of the art. Practical Music is the application of theoretical principles—the proper conduct of sounds as to their progression, duration, union, and adaptation to words, voices, and instruments, and is the art of composition. The present dissertation is merely executed to illustrate music as the actor does to the drama, or the reciter to the poem: though he requires, in order to excel, considerable knowledge of the subject and superior taste, yet he is as an orator—a singer or a player, and not, strictly speaking, an artist. Speculative Music is subdivided into Acoustical, Mathematical and Metaphysical. [Acoustics; Harmonics; Sound; Temperament.] Practical Music, into Vocal and Instrumental, the several kinds of which are noticed under their respective heads. The chief constituent parts of practical music are, Melody, Harmony, and Rhythm, to which we refer. See likewise Accent, Air, Chord, Composition, Counterpoint, Modulation, Thorough-Bass, Time, 

MUSIC, HISTORY OF The origin of music is involved in an obscurity which no ingenuity, no labour, has hitherto
been able to dispel; analogy and conjecture therefore have supplied the want of facts, in the absence of any assistance except what doubtful histories and the fables of mythologists have afforded, which at best have held out but a dim light, and more often misled than aided the inquirer in his researches.

It has been supposed by some writers whose names stamp a fallacy on all that has proceeded from them, that the invention and speech are coeval, an opinion which will hardly be disputed, if by song are meant sounds which, though vocal and sustained, are devoid of rhythm, governed by no scale, and consequently productive of no melody, in the modern accommodation of the word; but if such song be understood as a regular system of tunable, measured notes, then we shall not hesitate to say, that such advance towards art could only have been made by people proceeding fast in civilization, and living through the medium of a language adequate to all the ordinary purposes of man in a social state.

We are told by Lucretius, in a passage often quoted from the Bible book of his poem De Rerum Natura (Of the Nature of Things), that the birds taught man to sing, and that the invention of musical instruments of the infallible kind was suggested to him by the sounds produced from reeds when the western wind blew over them.

And taught him songs before his art began,
And while he was above, he taught the plains,
And shook the sounding reeds, they taught the swallows;
And then the pipe was found, and tuneful reed.

This certainly the merit of being very poetical, whatever reliance the historian may place on it. The same narrative of the infallible kind is found in Homer, as a beautiful account of the transformation of the nymph Syrinx into reeds. But Thomas Aquinas, the 'Angelic Doctor,' cited by the good Padre Giambattista Martini, in his History of Musical Instruments, has, leading to the example of the heathen author of the 'Metamorphoses,' or the disciple of Epicurus, and leaves the origin of music to chance; on the contrary, the noble Italian saint informs us that the first man was endowed by the Creator with every kind of knowledge, and was exalted in music, as well as in all other arts and sciences.

But quitting the ingenious guesses and fictions of poets and the reverses of enthusiasts, we find Jubal, the seventh son of Adam, mentioned in Scripture as 'the father of such as handle the harp and organ.' These terms however must not be understood quite literally; they are generic, and signify all instruments of the stringed and tube kind. The different versions vary in the translation of the original; the French render the word harpe by violon. Though the ancients are said to have tutored Jubal, it is that in Geneva, yet it is nearly certain that the Jews acquired their knowledge of it from the Egyptians. That Moses himself was educated by Pharaoh's daughter as her own son, and was 'learned in all the wisdom of the Egyptians,' is recorded on an Egyptian obelisk brought to Rome by Diocletian, who was instructed by him, in his maturity age, in rhetoric, geometry, rhythm, harmony, but, above all, in medicine and music. The whole generation of the law was led forth by the lawgiver from captivity, and was composed of musicians. We find in the temple of the ancient and patriarchal synagogue, the instruments with the arts and sciences, but is proved by modern discoveries to be the very reverse of truth. The fresco painting of a harp, found by Bruce in an ancient tomb near the ruins of Thebes, which is undoubtedly of very high antiquity, is an interpretation of a poem of Horace, and has been ascribed to the memory of the ancients in music. In form, dimensions, and ornament, this instrument might be mistaken for one of modern date, inso¬much that when a drawing of it was first shown in London, considerable doubts were entertained of its fidelity. Forty years after, however, M. Denon bore testimony to the truth of Bruce's description and the accuracy of his sketch; since when Rosellini's Monumenti dell'Egitto, a splendid work published in 1832, has confirmed all that the two famous collectors had said on the subject. Another instrument, which is found sculptured on the sarcophagus of Ptolemy Philadelphus (No. 17) a female figure is represented blowing the double pipe, and another appears to be playing on a musical instrument. (Lith. of Antiquities Knowledge: British Museum, vol. ii., p. 76.)

Music was a comprehensive term with the Greeks, embracing among other things which we shall have occasion to notice.

* There are some Egyptian paintings in the British Museum, which were brought from the great Temple of Luxor, and represent (No. 17) a female figure is represented playing the double pipe, and another appears to be playing on a musical instrument.
to mention, melody (Meloporia—literally the making, or composition, of the song) and poetry. To the latter is there is no objection, but to the former. From the various remarks, after an attentive perusal of the ancients, it is not convinced that eloquence, poetry, and melody were, in early times, governed by musical principles; that they were taught by the same master, and that the three arts were united. There are, however, instances. Lord Shaftesbury, *must have been in a manner the mother of poetry, rhetoric, music, and the other kindred arts,* and tradition, he adds, "could not better represent the first founders of large societies than as real songwriters."

Nor is it doubted that some artists who so industriously applied themselves to study the numbers of speech, must have made proportionate improvements in the study of mere sounds and natural harmony. The Greeks never separated poetry from melody; the most profound writers, even the poets of the great age, versified their songs, verses, and early times sang them at the public games and festivals. The Greek tragedies were *opera,* observes Payne Knight, meaning, we presume, that they were in a kind of recitative; and he is borne out in his sentiment by the best authorities. Aristotle, in his *Rhetoric,* observes, that the music of tragedy as one of its most essential parts. The nature of this music is indicated by several writers, but is more clearly pointed out by Philodemus than by any other. In his work in ten books on the music of the ancients (lost, but the fragments, unrolled and published at Naples in 1793), wherein it is described as a melody nearly approaching ordinary speech; that is to say, recitative. Horace calls Apollo the singer. The ancient poets give us to understand that the two arts were the same, and that the notes to the verses were confined literally in the case of the Greek poets. Homer, according to tradition, sang his own epics. But it is needless to multiply proofs of a fact so generally received.

Admitting, then, that Greek poetry of all kinds, religious, epic, and lyric, was recited by trained voices, we have to ask: what many believe, that oratory par excellence much of the nature of song, let us inquire what was meant by the word *singing.* It is not to be imagined that Homer, Tyrtæus, Pindar, &c., were singers, in our acceptance of the word; the supposition of their being so is entirely preposterous. But allowing them to have been as perfect in the vocal art as the moderns are, would they have condescended to deliver their poetry in long flights of notes, in divisions, in trills, and in passages that render it difficult, and sometimes impossible, to get at the sense? If, however, they had attempted to make their *heaven-born poet's subservent to song,* would they have found a patient audience?—Assuredly not; for the animating appeal, the interesting narrative clothed in poetical language, the frequent change of the poet's feelings, lighted up, and certainly would not have surrendered for the sake of a tune. Moreover, it must be recollected, and is a very important consideration, that when the art of printing was unknown, and manuscript copies of poems, &c., were unattainable, the simple at large did not circulate the multitude had no means of becoming acquainted with the productions of their poets but by hearing them recited; and as crowds assembled for this purpose, the best mode of rendering the voice of the reciter audible to many, and these congregated in open places, was, to pitch it rather high, and confine it to a small number of fixed musical notes. Such is still the practice, and with the same intent, in all cathedrals, and is called chanting, a usage which has doubtless been transmitted from the remotest ages. Such too is the method now by the modern *dettatori,* whose art, we are persuaded, is of the highest antiquity, and whose singing, it is our belief, much resembles that of the ancient Greeks in delivering their verses. Those extemporaneous poets always required an instrument as companion of a simple kind, to keep the voice in tune, and, as they confess, to animate them. The Greek reciters also were accompanied, either by the lyre or the flute, and probably for the same purposes. The flute was the companion of elegiac poetry; the lyre of the epic and the ode.

By what is called Greek music, therefore, we understand the union of poetry and music, the former of the two exercising the greatest sway over the mind, because expressing noble sentiments—gracefully inculcating religion and morality—teaching obedience to the laws—exciting generous feelings—and inspiring patriotism and courage by the praise of those who had distinguished themselves by their public services and their value. It is thus we account for the effects said to have been wrought by ancient music: for its producing within the human soul a sense of vast, profound ideas, to the sublime and beautiful; for keeping the soul in a kind of vocal melody and the sounds of mean and imperfect instruments, when he said that no change can be made in music without affecting the constitution of the state, an opinion in which Aristotle acquiesced, and Cicero after him.

The goddess Venus of Lycurges, set to measured sounds by Terpsicore, were turned into a song, or that this Lesbian musician quelled a sedition in Sparta by singing some pretty airs to the mob;—it is absurd to suppose that when Polybus tells of a sedition in Athens by a single voice, he means by coarse pipes and guitars;—and not less ridiculous it is to imagine that men were raised to the rank of chiefs and the dignity of legislators, solely on account of their taste in singing, or their skill on the lyre and the flute.

We cannot quit the subject of the vocal music of Greece, without adding a few words concerning the Greek *Nomos* and *Scolda.* The former (from νόμος, nomos, a race) were so called, says Plutarch, because they were not allowed to travel amongst the Greeks, or to sing in public. Each had an entertaining chapter on the subject, vol. I, 464; but the reader will find it more learnedly discussed in Potter's *Antiquities,* ii. 403.

As to the instrumental music of the Greeks, we confess on the subject and subject perhaps on the subject of our own time. The accounts given of it by the ancient writers are either so suspicious or so indefinite, that nearly all our labours in endeavouring to gain some knowledge of its nature has been expended in vain. Having Bianchini's learned work on ancient instruments before us, we feel entitled to express some opinion of their capabilities, and our opinion is not in their favour. They appear to have been rude, and suited only to music of the simplest description.

The Musical scale, or diapason, of the Greeks comprised five Tetrachords, or subdivisions of four sounds in each, the extremes being at the distance of a fourth. (Tetrachord.) And it must here be observed, that the ancient lyre had but five strings, so that the first and second notes, by emitting being tightened or relaxed according to the genius of the melody. Two conjoint tetrachords, with one additional note, formed the Octachord, or octave, to which the improved lyre equally applied. On account of the ten sounds produced as many Genera (Genera), the Diatonic, the Chromatic, and the Enharmonic; which see. The first was composed of the sounds which the modern name E, F, G, A; the second of E, F, F, A; the third of E, E, F, A. The notes, or sounds, were represented by the letters of the alphabet, the great and small, which, in order to extend their application and distinguish the various modes, were placed in different positions—the direct, the inverted, the inverted, and the horizontal; and these were, as occasion required, altered in form. The time, or duration, of the notes was known by the long and short syllables to which they were set; the long syllable was in duration as two; the short as one. But we know only the comparative times of these; of the positive lengths of notes we remain in ignorance. The modern modes, it is supposed to have been slow. The Modes were, according to Alciphron, fifteen in number: Aristoxenus makes them thirteen, each a semitone distant from the next in order. Under the word *Mode* we have given the table of Alciphron, we believe that of Aristoxenus; the last of the Greek writers on music, which commences with the Hypodian the lowest.
It will be here observed, that what may be called the key-note of the various modes does not agree with that in the barbarous and savage music, as we have related to Abbé Barthélemy, after having in vain resorted to numerous authorities for some means of reconciling the discrepancy. Native writers on this obscure subject are thoroughly agreed, and it is probable that none in future will attempt to explain it by直升 on one of the little hope that remains, and offers so small a reward for success. The three principal and most antient modes had different characters: the Doric was grave and majestic; the Lydian, soft and complacient; the Phrygian, bold, enthusiastic, and used in causes. Brought out of the Lycian, this mode was received by the present Phrygians from his Republic, because exciting the enravelling passions; but the Doric and Phrygian he allowed, as manly and decent. Pindar set his fourteenth Olympic ode to the Lydian, as being addressed to the Greeks. According to this method of expressing the sounds, it is evident that music for the solemnities of Cybele; and Statius introduces it in the funeral rites of Archermus.

By the word μολος (melos) the Greeks generally signified what we call air, or something like it; but sometimes, in speaking of music, they used it in the sense of ὄμολος, i.e. melody abstracted from rhythm, or time; sometimes for measured melody; and sometimes as equivalent to song, including melody, rhythm, and words. By συμμολος (harmonia) they intended simply to express, as we have in a former page, that the parts of the composition agree with each other in harmony, and that the sound of one does not enter into conflict with another— the pleasing agreement of intervals; that is, to say, melody. Metastasio believes that this term the Greeks signified what we mean by melody, founding his assertion on the passage from Plato (De Legib., lib. ii.). The regulation of the manner in which music is called rhythm; but the regulation of the voice is called harmony. Rousseau says—The sense given by the Greeks to this word, in their music, is the more difficult to ascertain because it has originated. Both the inquiry and reflection have only confirmed the opinion we have long entertained, namely, that though the ancients, by mere accident, if not from specific, must have been acquainted with the effect of aqueous sounds, nevertheless that which we call harmony was formed of parts of music, and much, if not quite, rational and practically. And we repeat our belief, that in the union of poetry and song, which undeniably operated with such amazing force on all classes of the people,—which in fact, with ardour, softened them into obedience, and melted them into pity,—music was but the ally of verse.

Of their instrumental music, or music without the voice, we are told that the flute-players by profession—who certainly were exceedingly encouraged and most extravagantly paid for their services—by the latter times of Greece, put themselves chiefly on the strength of the sounds they could produce from the instrument; and that the trumpeters thought themselves fortunate if, in their contests at the public games, they escaped without the rupture of a blood-vessel. It is not necessary to reconcile these statements with one another. All the remarkable phenomena Aristotle must allude in saying, 'I disapprove all kinds of difficulties in the use of instruments, and, indeed, in music generally; I mean such tricks as are practiced at the public games, where the musician, instead of respecting what is the true object of his art, endeavours only to flatter the corrupt taste of the multitude.' Facts and remarks like these do not lead to any favourable opinion of Grecian performers. It is likely however that they pleased most when they played the airs set to the favourite poems and popular songs. And there seems some reason to believe that they extended these by divination, but remained study, but often extemporens, resembling what are in modern language called variations, or an amplification of the theme.

This was a tradition that Cadmus, with his Phœnician, introduced music into Greece. But Plutarch, in his 'Dialogue on Music,' first makes Lycias, a professor of the art, repeat the statement of Heracleides, that Amphion, the son of Apollo and Antiope, taught the Greeks to compose and sing. The tripartite division of the modes, Ionian, Dorian, and Aeolian, contradicts the first, assigning to Apollo the merit of having converted Greece into a musical nation. The invention of the lyre of three strings is given to the Egyptian Mercury, or Thoth; that of seven strings, to the second or Grecian Merys of flute, the organ of a pastoral music. It is said that this mode was quite traditional, and depended on the memory, and sometimes the caprice, of the performer. Plutarch says of him, on the authority of Alexander, an historian, that he took Homer for his model in versification, and Orpheus for the style of his melodies. The musical compositions of Orpheus, the same writer adds, were wholly original.

Many celebrated players on the flute are mentioned in musical history. Demon taught Pericles and Socrates the use of which of these authors was the more capable of playing the flute, or the organ; and the flute-player Orpheus is said to have been a pupil of Thrasylus, a celebrated Thalian musician, Isemia, cost nearly eight hundred pounds sterling.

Pythagoras, of whom an idle story was long current, about a blacksmith's shop, harmonies, and anvil, contributed learning to the improvement of music. In his philosophical experiments. To him also is attributed the addition of an eighth string to the lyre. His notion concerning the music of the spheres—music produced by the motions of the heavenly bodies—was one of those whishes which great grounds and apt, now and again, to indulge. He was of the sect of severe musicians, of those who reduced music to mathematical precision, and regulated all sounds by calculations, allowing no licence to the ear. Of an opposing school was Aristoxenus, born at Tarentum in Italy, and was a gnostic, and that the sound of the string in a masterful way, and was a real, and he was the musician of that age. He was of the sect of severe musicians, of those who reduced music to mathematical precision, and regulated all sounds by calculations, allowing no licence to the ear. Of an opposing school was Aristoxenus, born at Tarentum in Italy, and was a gnostic, and that the sound of the string in a masterful way, and was a real, and he was the musician of that age.
logue on Music' much information concerning ancient Greek music is to be found, but not of the most valuable kind. Aristides Quintilianus wrote a treatise on music, printed in the collection of Meibomius, which has proved a useful work to all subsequent writers on the subject. He was a faithful critic in matters of fact and calculation is worthy of confidence.

The Romans acquired all their knowledge of the arts and sciences from the Greeks; their music therefore in no way differs from that of the latter; though they must have had something new, for it is as if all nations once had the same course, the place between them and the polished nations of Greece. It is certain that the art was never advanced by that warlike people, notwithstanding the share it had in all their religious ceremonies and public festivals, and the use made of it in their speeches and orations. And though it formed an essential part of the theatrical exhibitions of every kind, and was even adopted, or affected to be adopted, as a profession by one of their emperors.

The important part music bore in the state of the early Romans is shown by a regulation attributed to Servius Tullius, who, in dividing the people into classes, directed that two whole centuries should consist of trumpeters, blowers of the horn, &c., and of such as, without any other instrument, sounded the notes. This is confirmed by a law of the Twelve Tables, which limited the number of players on the flute at funerals to ten. And another of those laws enacted, that at the praises of honoured men in the assemblies of the people, there should be sung, accompanied by a flute or gaul flute. As a passage in Livy leaves no doubt on this subject, and being as curious as it is illustrative, we shall give it entire, availing ourselves of Dr. Burney's translation. 'I should omit a circumstance,' he says, 'hardly worth mentioning, if I had not seen it contained in the course here taken, that the Tiborines (or flute-players), takingoff at the preceding sensors for having refused them the privilege of eating in the temple of Jupiter, according to custom, withdrew in a body to Tibur (Tivoli), so that there were no performers left to play at the sacrifices. This was told to the minds of the senators, and ambassadors were sent to Tibur to persuade the fugitives to return to Rome. The Tiburtines promised to use their utmost endeavours to this end, and first summoning the discontented band before their senate, exhorted them to return to Rome: but finding them deaf to reason or entreaty, they had recourse to an artifice well suited to the dispositions of those men; for, on a certain festival, they were all invited, under pretence of assisting in the preparation of a feast. The guests were generally much addicted to wine, they were supplied with it, till, being quite intoxicated, they fell fast asleep, and in this condition were flung into carts, and carried to Rome, where they passed the remaining part of the night in the houses of their friends. They were then summoned by a trumpet, and called to会使. The next day, while full of the fumes of their debauch, upon opening their eyes they were accosted by the Roman people, who, flocking about them, and having been prevailed upon to stay in their native city, they were allowed the privilege of strolling through all the streets in their robes, three days in every year, playing on their instruments, and indulging in those licentious excesses which are practised on the same occasion to this day (that is, to the time of Augustus). 'The privilege of eating in the temple was not possessed by them much longer than before the sacrifices.' This happened 369 B.C. 'The Roman flute-players,' Burney adds, 'were incorporated, and formed into a college or company.' Ovid, in his 'Fasti,' (lib. vi.), acknowledges the importance of the Tiborines, and relates a story about the story of Livy, but drops the scruples of the Patres Conscriptr.

That the Roman drama was in some way musical, is proved by the title, or didascalia, prefixed to each of Terence's plays. A further proof of this is found in the Institutes of Quintilianus, where, speaking of instructing children in music, he adds, 'that he does not desire that they should learn such music as prevails on the stage, the modulations of which are so intermixed with impudence and vulgarity, that they may justly be charged with having extinguished manly courage which had been left.' That the theatrical music of the Romans was similar to that of the Greeks there seems to be little doubt; that it was distorted by the performers in Quintilianus' time is very likely.

It is remarked by Dr. Burney, that even during the Augustan age the Romans had no sculptor, painter, or musician, and but one architect, Vitruvius; those, he says, who have been celebrated in the arts at Rome having been Asiatics or European Greeks, who came to exercise such arts among the Latins being either alienated or not among themselves. This custom was continued under the successors of Augustus, and those Romans who were prevented from going into Greece contrived in a manner to bring Greece to Rome, by receiving into their service the most able professors of Greece and Rome.

The Roman writers on music are few, and almost worthless. Vitruvius, in his work on architecture, treats of the sound of the voice, of reverberating vases, and of a water-glass; but he does not give any idea of what he means by this instrument. He also endeavours to give a plain the harmonical system of Aristoxenus, though he acknowledges the difficulty of the task. St. Augustine wrote on rhythm and metre; Boethius devotes five books and several chapters to the Greek and Roman modes; and Aurelius Cassiodorus treats of music, amongst other things, but his work, or sketch, is said to consist of little more than some general definitions and divisions.

There is every reason to conclude that music remained detrimental till the time of the Augustan age; the neater conjectures that the early ecclesiastical manner of singing was like that of the ancient theatre, and Dr. Burney concurs in this opinion; though we cannot but think it unlikely that the 'songs of Zion,' as performed in the Jewish temple, could have been of the resemblance or the altars, were chosen as vocal models for devotional purposes, rather than the airs, or recitatives, in which the comedies of Plautus and Terence were delivered. Towards the end of the first century, St. Ambrose digested a musical service for the church of Milan, which is called the Ambrosian chant, and was founded on four of the Greek modes. About the year 600 Gregory the Great enlarged and much improved the chant of the church, by the admission of four more modes than the ancient one, and which it still retains in the Catholic service, and in which it is known as the Gregorian. According to Bishop Stillingsfleet, music was introduced into the English church by St. Augustine, in the latter part of the sixth century, and was subsequently much improved by the monks of the western church. Our Carolists, who, it is said, furnished some few churches with an organ.

The organ—the most majestic and comprehensive of all musical instruments in its present almost perfect state—is supposed to have been an improvement of the hydraulion, or water-organ, of the Greeks. The first or hallowed in musical history was sent, in 757, as a present to King Pepin, by the Byzantine emperor Constantine Copronymus. In the tenth century the organ was in use in several parts of Europe; but it is reasonable to conclude that it was then placed among the instruments employed in the Roman church, mechanism: nevertheless, it may fairly be assumed that the invention of the organ hastened the discovery or practice of harmony. [Organ.]

To Guido, of Arezzo, we are indebted for many of those improvements in musical art which led to our present system, though the origin of counterpoint has been erroneously ascribed to that active and ingenious ecclesiastic. [Guido.] Magister Franco, a member of the cathedral of Cologne in the eleventh century, is considered as the inventor of modern counterpoint; a system of dividing the notes which meant, notes showing, by their forms, their time or duration. Most of those, however, have fallen into disuse, for the shortest in his table is the semibreve. Nevertheless his system, carried out further by De Musa, and by later monks, has been extended beyond even the longest length—is that of the present day, and is so sound in principle that it probably will never be abandoned.

From the eleventh to the fifteenth century, scarcely anything is known of the progress of Music, for its history...
MUSK (Zoology) [Moschidae]

MUSK. This substance is an extremely odorous secretion, lodged in a bag which is attached and peculiar to the udders of the male musk-animal. The elevated region is frequented by the creature, its timidity and speed in flight, render it very difficult to obtain the substance, while the high price borne by it offers great inducements to substitute other articles for that which is genuine. The musk-bag is more or less of a loose conformation, and is nearly filled with a yellow-brown, nearly transparent, in fatty, and, less, with a yellow-brown, nearly transparent, paper, which becomes moist by time. The most distinctive mark of this sort of musk is, that it is slightly flattened, nearly round, and very rarely pear-shaped. The yellow or yellow-brown hairs, chiefly at the sides, are often cut, while those which remain in the centre are darker coloured, finer, and less brittle. Generally the hairs converge or point towards a small, natural opening. The pots are mostly about two and a half inches long, and one and three-quarters broad. The weight of different specimens varies considerably, some being merely three drachms thirty grains, others nine drachms forty-seven and a half grains; the average is six drachms twelve grains. The average quantity of musk contained in the sacks is about two and a half drachms.

By careful removal of the bag, there remains the musk, which is solid, in grains of different sizes, adhering to each other, soft, and translucent, of a reddish-brown colour, like a clot of blood dried, having frequently a number of hairs intermixed, derived from the inner side of the orifice already described. The taste is bittersweet, acid, disagreeable, and somewhat astringent. The odour is strong, peculiar, and fragrant. A casting, or residue, is produced, very tenaciously adhering; and one part can communicate its odour to 3600 parts of an insipid powder. It should be kept in glass-bottles, very closely stopped, and preserved in a place neither very dry nor too damp. By the analysis of Geitz and Reimann it appears to consist of: 1. a peculiar volatile principle, which can exist in two states; 2. ammonia; 3. a peculiar, fixed, uncrystallizable acid (these three are in indeterminable quantity); 4. stearic and oleic; 5. cholesterin; 6. a peculiar bitter resin; 7. oesmarnoses, with several salts; 8. a mucilaginous substance, in part combined with oesmarnoses, and numerous salts; 9. sodium, 10. water, acid, &c., with some volatile odorous matter.

It has not been ascertained upon what musk depends for its peculiar properties. It has been conjectured that a kind of putrefaction goes on which evolves the peculiar odour. Moisture seems to favour this, and musk which, when dry, yields little scent, becomes powerful when moistened. The odour is augmented by adding a few drops of the solution of subcarbonate of potassa.

1. Tonquin Musk. 2. Kabardin Musk.

Musk is more soluble in water than in alcohol. Of 100 parts of genuine Tonquin musk, boiling-water dissolves 90 parts, alcohol only 50. Of Kabardin musk, water dissolves only 50 per cent. It is likewise soluble in ether, acetic acid, and yolk of egg.

Musk is the odour of the pod is sometimes met with, which is not flattened, but perfectly round; the hairs of a yellowish-brown colour. This is probably the musk-bag of the Moschus Alpinus.

It is safest to purchase the musk out of the pod, as there is then less opportunity of adulteration. Infusion of genuine musk is not precipitated by a solution of bichloride of mercury (corrosive sublimate); but genuine musk is precipitated by nitric and other strong acids, by acetate of lead (sugar of lead), and by the alkalis. The musk-bags used by perfumers to prepare 'essence of musk.' An artificial musk is sometimes made with nitric acid and oil of amber. This should never be used for medical purposes.

Taken in the dose of a few grains, musk renews the energy of the digestive organs, and in larger doses produces sympathetical phenomena, the powers of the whole animal system appearing suddenly increased. By repeating the doses till half a drachm or a drachm is consumed, the active prin -
ciples penetrate the whole frame, influencing all the tissues, and exciting effects demonstrative of its stimulating property; the blood circulates with more force, accompanied sometimes with bleeding from the nose: the perspiration and other secretions are perceptibly increased. Other effects prove that it also acts on the brain, spinal chord, and ganglionic nerves, such as tendency to sleep, convulsive movements, and particularly spasms of the chest and abdomen. On the tongue, palate, and gums, muslin produces in some persons very extraordinary effects, at times so violent that they cannot bear the faintest odour of it.

Muslin has been recommended in typhus and other fevers, with other diseases, for its有利 effects and for abating the thirst of the patient. It produces a sense of coolness, and it is serviceable in a feverish state. In addition to its use in fever, it is useful in arresting a tendency to gangrene. Likewise in retrogressive gout it has proved successful. It was found of little avail in severe cases of Asiatic cholera, though useful in the milder forms of it.

MUSK-RAT (Musquash)

MUSKERRY MOUNTAINS. [Core]

MUSKET. [Army, p. 373]

MUSKINGUM. [Mississippi River]

MUSLIN, a thin cloth made of cotton. The name is supposed to have been derived from Musal, a place called Musali-pam, from which place such fabrics were first imported into Europe. Until the early part of the present century all the muslin used in Europe was of the manufacture of India. These fabrics are still superior to any that are made in England. It is well-known that they are made of materials which latter quality is not, as some people have supposed, the consequence of any superiority in the quality of the material of which they are made, for the raw cotton of India is inferior to that which is imported to those fine fabrics in Europe, and which is brought from America and from Egypt.

The excellence of India muslins is owing to the skillfulness and patience of the spinners and weavers in that country. Some of the muslins of India, and especially those of the best quality, are of the most decided degree of thinness, so as to justify their poetical description as 'webs of woven wind.' Such however has been the result of the mechanical inventions of India in this branch of industry, that not only are muslins of British manufacture now used at home, to the exclusion of those woven in India, but large quantities are exported to all parts of the world, and find their way even far into the interior of India.

The great seat of the muslin manufacture in this country is Paisley near Glasgow. The greater part of the yarn used for these fine cloths is spun upon the machines of the Paisley manufac-

turer. Muslin cloths are both plain and figured. By a late invention they are sometimes embroidered by means of machinery.

MUSCIUS RUFUS, CAIUS, a Stoic philosopher of the first century of our era, is mentioned with praise by Tacitus (Ann., xiv. 59), and also by Pliny the younger, Philostratus, Themistius, and others. He was a native of Vulsoni in Etruria, and belonged to the Equestrian order. He was a friend of Thrasea Paetus, Bares Soranus, Rabulius Plautus, and other stoics, who were the victims of Nero’s suspicion and cruelty. Musonius was banished to Gyauros, where he is said to have been visited by many Greeks for the purpose of listening to his lessons. Being recalled from his exile on the death of Nero, he settled at Athens, who, excepted him from the sentence of exile pronounced by that prince against the Stoic philosophers. This scanty information is all that we have concerning the biography of Musonius Rufus. (Nieuwland, Dissertatio de Musonio Rufó, Philosopho Stoico; Philosophical Transactions, volume 4, number 21, edited by T. Venhausen Peerlkamp, Corrector Gymnasii Harleianae, 8vo, Haaremd, 1852. These fragments of Musonius are full of the purest morality and wisdom.

MUSOPHAGIDÆ (Plantain-eaters) Mr. Vigors notes that Musophaga has been found among the Scansorial birds; and speaks of the genus Vigna [Columbidae, vol. ii.] as united by their comparatively stronger and more solid bills to Peneocora and Corea, such in his arrangement form the order of the order Runus, as well as to Munopaga and Corythax, which approach the whole of the Scansoria family and connect them with the Perches. [See also, vol. ii.]

Mr. Swainson raises the group of Plantain-eaters to the rank of a family under the name of the Monasa, which he designates as the most conspicuous of the group.

He thus characterizes the family:

Bill short, upper mandible high, the culmen arched, the margins either serrated or entire, the under mandible very short, the eye large.

The place which this family occupies in Mr. Swainson’s arrangement is next to the Fringillidae, at the end of the Passeridae, and immediately before the Saccornes, intermediate between the Fosna and the Hornbills. He places the wings and the tail of those birds, which, like them, are of a size proportionate to those birds, remarking that, with the exception of one genus, they all possess a short but very strong bill. The term Musophaga is opposed to Fringillidae, and to all other families. Mr. Swainson remarks that it is singular to observe that the bill in this family approaches that of the Fosnae and their close relatives, and that of the Monasa should yet be employed in procuring the safest vegetable food; while the short bill, pattering nostrils, hopping gait, and purely vegetable food, are all exemplified in such birds as Cercus galeatus, and proclaim the affinity of the Plantain-eaters to the Hornbills.

Mr. Swainson further remarks that the economy of these birds, so far as they have been observed by travellers, is directly against the theory of their being likened to the gallinaceae, in that they live on a vegetable diet; and he quotes Cuvier and those of Yarrell in support of his opinion. The former, in the Regne Animal, states that Corythax and Musophaga appear to him to have some analogy with the Gallinaceae, and particularly with the Buceros. They have the wings and the tail of those birds, and, like them, keep on trees; their bill, he continues, is short, and the upper mandible convex; their feet have a short membrane between the anterior toes; but it is true that the external toe is often directed backwards like that of the owl. Their bills are of a moderate size, and arched, the edges of the mandibles are dentilated, and the sternum (far less that of the Touroaco) has not the great notches which are ordinary in the Gallinaceae birds. Mr. Swainson observes that this admission of Cuvier, that Corythax and Musophaga are not the only present" to the Gallinaceae, and that they have not the notched sternum of the latter, is directly opposed to the theory of these birds leading to the Gallinaceae, a view of the subject which is confirmed by Mr. Yarrell’s observation. The latter zoologist discovered a Touroaco (Corythax Persa) which has the appearance of the monasa, and he found the general appearance of the inside of the body of the bird inclining rather to that of the Perches than of the Gallinaceae. [See also, vol. iv., p. 919.] Mr. Swainson separates the family of the Plantain-eaters from the gallinaceae and genera:

Phytotoma, Plant-cutters.

Bill serrated, but not swollen. Feet with two or three toes forward and one backward. (Sw.)

Genera.

Phytoma, Molina. Hyrax, Stevens. Of these we select Phytotoma.

Generic Character. —Bill short, compressed, the base wide; high at the base, and gradually curved; the lower mandible much weaker, straight; the commissure slightly arched, with the margins crescent. Tongue short, pointed. Nostrils basal, small, rounded. Wings moderate; the two outer quills gradually diluted; tail moderate, even. Feet strong. Lateral toes unequal, the inner shorter. Claws slenderly curved. (Sw.)
Example, Phytotoma rara.

Description, Habits, &c.—Molina describes the Rara or Chilian Plant-cutter as nearly of the size of a quail, with the bill rather large, conical, straight, a little pointed, serrated, and half an inch in length; the tongue very short and obtuse, the pupil of the eye brown. Three well proportioned anterior toes, the fourth posterior and a little shorter. The tail moderate, but rounded. The colour is an obscure grey upon the back, rather brighter on the belly; the points of the quills and of the tail are black. The sound of its voice is hoarse and interrupted, and seems to express its name. It feeds on plants, but previously has the destructive habit of cutting them off close to the root, and often carelessly cuts off a quantity of them without warning them further. For this reason the peasants persecute this species, and carry on a continual war against these birds; moreover children who destroy their eggs are rewarded. The nest is built in obscure and but little frequented places on the most lofty trees, and thus these Plant-cutters escape the persecutions of their enemies. Notwithstanding such precautions however, their numbers are considerably diminished. 'I do not know,' says Molina in conclusion, 'whether this is because a price is set on its head, or on account of its naturally small degree of fecundity.'

Chilian Plant-cutter.

Mr. Swainson observes that in Phytotoma the four toes appear to be arranged as in the Finches, but in Hypus the toes are only three. He compares the size and entire aspect of Phytotoma to that of a Bullfinch.

Coline. Colies.

The only definition of this subfamily given by Mr. Swainson is, 'all the four toes placed forward,' and the only genus contained in it is Colius. (Brisson and Gmelin.)

Generic Character.—Bill short, strong, conical, slightly compressed, entire, with the mandibles equal and the edges arched; nostrils rounded; nails arched and long, that of the hind-toe shortest; wings short; third quill longest; tail graduated and very long.

Habits, Geographical Distribution, &c. of the Genus.—The plumage of the species is soft and silky, and the colours generally sombre, whence they are called at the Cape, according to Le Vaillant, Giseaux Sours (Mouse-birds). Africa and the East Indies are the localities where they have been found. The Colius viridis of Latham, said to be from New Holland, belonging probably to another genus. The Colies are gregarious, live upon fruits, and are the scavengers of gardens. They walk badly, but they climb almost continually on the branches of trees, where they hold on, assisting themselves with their bills like the

Parakeets. They build their nests, which are spacious and round, in little groups; and Le Vaillant affirms that they sleep suspended with their heads downwards, and that, when it is cold, they are found so bunched in the morning, that they may be taken one after the other. The number of eggs is generally five or six, and the flesh of the birds is said to be delicate. (Lesson.)

Example, Colis Senegalensis. (Latham.)

Description.—Round the eye a naked, reddish skin; forehead yellow; colour pearl-grey, with greenish reflections; abdomen ruddy.

This appears to be the Colius Quininx—the trivial name is taken probably from its note,—of Le Vaillant; and the Colis avipa du Sénégal of Buffon.

Chilian Senegalensis.

Musophaginæ. Plantain-eaters.

Three toes forward and one backward; the outer toe placed obliquely. (Sw.)

Genera. Corythaix. (Ill.)

Generic Character.—Bill short, rather small, high, and greatly compressed. The frontal feathers reposing over and concealing the nostrils. Culmen high, curved to the tip. Lower mandible narrow; both mandibles distinctly notched at the tip and finely serrated. Wings short, rounded; the first quills greatly expanded. Tail long, broad, rounded. Feet short, strong. Middle toe longer than the tarsus; lateral toes equal, hind-toe shortest; external toe capable of being turned a quarter of the way backward. Claws short, thin, and much compressed.

The Tourocks are most elegant birds, and feed principally on soft fruits. The prevailing colour of these birds is green, varied in some species with purple on the wings and tail. They are natives of Africa, where they perch on the highest branches of the forest trees, and thus keep out of gun-shot, or the hands downward, and that, when it is cold, they are found so bunched in the morning, that they may be taken one after the other. The number of eggs is generally five or six, and the flesh of the birds is said to be delicate. (Lesson.)

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Genera. Corythaix. (Ill.)

Generic Character.—Bill short, rather small, high, and greatly compressed. The frontal feathers reposing over and concealing the nostrils. Culmen high, curved to the tip. Lower mandible narrow; both mandibles distinctly notched at the tip and finely serrated. Wings short, rounded; the first quills greatly expanded. Tail long, broad, rounded. Feet short, strong. Middle toe longer than the tarsus; lateral toes equal, hind-toe shortest; external toe capable of being turned a quarter of the way backward. Claws short, thin, and much compressed.

The Tourocks are most elegant birds, and feed principally on soft fruits. The prevailing colour of these birds is green, varied in some species with purple on the wings and tail. They are natives of Africa, where they perch on the highest branches of the forest trees, and thus keep out of gun-shot, or the hands downward, and that, when it is cold, they are found so bunched in the morning, that they may be taken one after the other. The number of eggs is generally five or six, and the flesh of the birds is said to be delicate. (Lesson.)

Example, Colis Senegalensis. (Latham.)

Description.—Round the eye a naked, reddish skin; forehead yellow; colour pearl-grey, with greenish reflections; abdomen ruddy.

This appears to be the Colius Quininx—the trivial name is taken probably from its note,—of Le Vaillant; and the Colis avipa du Sénégal of Buffon.

Chilian Senegalensis.

Musophaginæ. Plantain-eaters.
tremely happy that I had not been impaled on the sharp-pointed stake placed in the bottom of the pit, and still happier that I found in it no company. I was however apprehensive that some might arrive every moment, especially if I should be obliged to remain there during the night. In this dilemma Le Vaillant fired his fusees at intervals; the shots at last were answered, and he was delivered by his Hottentots. But he did not forget his Touaraco, and now, by the aid of his dogs, which had followed the Hottentots, found it squatted under a tufted bush. He afterwards laid snares for them on the fruit-trees, to which they resorted to feed, and took them alive.

The following cuts will give but an imperfect idea of these elegant birds.

This beautiful species is the *Opalothrix erythroleophas* of Vieillot; the *Mphaga Paulina* of Temminck; and *Corythaix igniceps* of Lesson.

Our figure was taken from a specimen that lived for some time in the gardens of the Zoological Society in the Regent's Park.

*Locality, Africa.*

**Corythaix Senegalensis.**

*Perhaps the most delicate species is Corythaix erythroleophas, Sw.*

**Description.**—Crest, which is red, erect and compressed; sides of the head, ears and chin, and patch round the eye (which is large, red, and brilliant), white; general plumage green, inclining to bluish on the body and belly; quills rich purple violet; tail rounded; bill yellow; feet greyish-black.

* N.B. The crest, when the bird is excited or in action, is elevated into a compressed subconical shape; and, when thus erected, it gives the head a helmeted air.

**Corythaix erythroleophas.**

Several specimens of Touaracis are to be found in our museums, and there are at present (September, 1839) two (Corythaix Buffoni) living at the gardens of the Zoological Society, Regent's Park.

**Chizarhis. (Wagler.)**

**Generic Character.**—Bill large, high and thick at the base, compressed beyond. Culmen thick, convex, considerably arched. Lower mandible not half so high as the upper; the tips of both deeply notched, with their margins finely crenated. Nostrils basai, placed close to the top of the bill, naked, lunular, and pierced in the substance of the bill. Wings lengthened: the four first quills graduated. Tail lengthened, slightly rounded; the tips very obtuse. Feet as in Corythaix. (Sw.)

**Example, Chizarhis variatigata.**
Musquash

Description.—Light grey above; a blackish stripe down each feather; front, top of the head, chin, and throat as far as the breast, chestnut-brown; under plumage beyond the breast white, but each feather with a dark middle stripe; primary and secondary quills blackish, with a spot of pure white varying in size in the middle of their inner webs; tertaries and middle tail-feathers grey, tip with black; lateral tail-feathers black; bill yellow; feet grey. Crest placed very far back on the nape. Total length about 20 inches.

This appears to be the Touraco hupé-col of Le Vaillant; Phmanus Africanus of Latham, and Musophaga variegata of Vieillot.

Locality, Africa.

Musquash, the Cree name for the Fiber Zibethicus of Cuvier (Ondatra of Lacépède), a genus belonging to the family Castoridae.

Dr. Richardson (Fauna Boreali-Americana) gives the following synonyms of this rodent:—

Rat Musqué de Sagard Theodat; Castor Zibethicus of Linnaeus; L'Ondatra of Buffon; Mus-Rat of Lawson; Musk-Beaver of Pennant; Musquash of Josselyn; Mus Zibethicus of Lin, Gmelin; Fiber Zibethicus of Sabine and Harlan; Mus-Rat of Hodgson; Ondatra of the Hamps; Musquash, Watuss, or Wachuss, also Pesquaus-Trapayes (the animal that sits on the ice in a round form), of the Cree Indians.

In a tract which has for its title 'A Perfect Description of Virginia,' 1649, we find among the 'Beasts great and small,' 'A Musk Rat, so called for his great sweetness and shape.'

Dental Formula:—Incisors, $\frac{2}{2}$; Molars, $3-3 = 16$.

Musquash variegatus.

Chiiark—Bill resembling that of Chiiarkis;

Musophaga. (Isert.)

Generic Character.—Bill resembling that of Chiiarkis; but the base enormously dilated, so as to spread like a casque or helmet over the fore part of the head as far as the crown, where its thickened sides form a semicircle. Noses naked, oval, open, placed nearer to the tip than to the eyes, and pierced in the substance of the bill. Wings, feet, and tail as in the Corythax. (Sw.)

Example, Musophaga violacea.

Description.—Bill rich yellow, passing into crimson; orbits naked, and, like the compact velvety feathers of the crown, glossy crimson; a white stripe beginning below the eye and extending above the ear; secondary and part of the primary quills carmine, with lilac reflections, margined and tipped with blackish violet, which is the general colour of the plumage, only that it changes into a very deep green on the under parts, and is very rich on the tail; legs strong and black; gape wide, opening beneath the eyes.

This magnificent bird appears to be the Cuculus regius of Shaw.

Locality, Africa: Gold Coast and Senegal.

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March, at which time its food consists of bits of wood, which it peels before it eats them. After the dissolving of the snows, he says that it lives upon the roots of nettles, and afterwards on the stalks and leaves of that plant. In summer it feeds on strawberries, &c., to which succeed the autumnal fruits. During this time, he states that the male and female are generally seen together. 'They likewise,' adds Charlevoix, 'build cabins nearly in the form of those of the beavers, but far from being so well executed.'

To their place of abode, it is always by the water-side, so that they have no need to build causeways, which is tolerably good eating, except in the time of rut, at which season it is impossible to cure it of a relish of musk, which is far from being as agreeable to the taste as it is to the scent.'

Dr. Richardson (Fauna Boreali-Americani), from whom the abridged description, taken, and to whose details we refer the reader, states that the Musquashes vary considerably in size, and that though they have a strong musky smell, particularly the males, in spring, their flesh, which somewhat resembles flabby pork, is eaten by the Indians, who prize it for its fat when it is fat, but soon tire of it. They have, according to this author, three litters in the course of the summer, producing from three to seven at a litter, in 55° N. lat., and begin to breed before they attain their full growth. The members are destroyed by the inundations which cover the low grounds where they haunt, and in severe winters they are almost exterminated from some localities by the freezing of the swamps inhabited by them.

Famine in such cases drives them to destroy each other. A great number of which are occasionally killed, and thrown away, and the deaths at such periods (which are uncertain) are so numerous, that a fur-post, where the Musquash is the principal return, is not unfortunately abandoned till the security of the animal has repaired, which it does in very few years, the ravages of disease.

Dr. Richardson places the southern limit of the Musquash about 36° N. lat. According to Bartram, they are found in the north of Georgia and Florida, and Dr. Richardson ascertained that they extended northwards to the mouth of the Muskingum, 66° N. lat. Small grassy lakes or swamps, or the grassy borders of sluggish streams with muddy bottoms, are favourite haunts, and there they feed chiefly on vegetables. In the northern districts the roots and shoots of the bulrush and reed-mace, and the leaves of various carices and aquatic plants form the staple. Pennant states that they are very fond of the Sweet-flag (Acorus Calamus), which, according to Dr. Richardson, does not grow to the northward of Lake Winnipeg. The last-named author often saw small congregations of fresh-water mussel-shells (Unio), on the animals of which they are said to feed, and which, he was informed, had been left by them.

The habits of the Musquashes and the mode of hunting them are thus described by the Doctor:—In the autumn, before the shallow lakes and swamps freeze over, the Musquash builds its house of mud, giving it a conical form, and a sufficient base to raise the chamber above the water. The chosen spot is generally amongst long grass, which is incorporated with the walls of the house, from the mud being deposited among it, but the animal appear to make any kind of composition or mortar by tempering the mud and grass together. There is however a dry bed of grass deposited in the chamber. The entrance is under water. When ice forms over the surface of the swamp, the house-marks make a hole through it, and protects them from the frost by covering of mud. In severe winters however these holes freeze up in spite of their coverings, and many of the animals die. It is to be remarked that the small grassy lakes selected by the Musquash for its house are not usually covered with such thick ice as deeper and clearer water. The Indians kill these animals by spear-them through the walls of their houses, making their approach with great caution, for the Musquashes take to the water when alarmed by the ap- proach. An experienced hunter is scarce acquainted with the direction of the chamber and the position in which its inmates lie, that he can transfix four or five at a time. As soon as, from the motion of the spear, it is evident that the animal is struck, the house is broken down and it is taken out. The principal seasons for taking the Musquash are, the autumn before the snow falls, and the spring, after it has disappeared, but while the ice is still entire. In the winter time the depth of snow prevents the houses and breathing-holes from being seen. One of the first operations of the hunter is to stop all the holes with the exception of one, at which he stations himself to spear the animals that have escaped being struck in their houses and come hither to breathe. In the summer the Musquash burrows in the banks of the lakes, making branched canals many yards in extent, and forming its nest in a chamber at the extremity, in which the young are brought forth. When its house is attacked in the autumn, it retreats to these passages, but in the spring they are frozen up. The Musquash is a watchful but not a very shy animal. It will come very near the house which is tolerably good eating, except in the time of rut, at which season it is impossible to cure it of a relish of musk, which is far from being as agreeable to the taste as it is to the scent.'

VARIETIES.—Dr. Richardson records three varieties besides that above described.
1. The Black Musquash, rare.
2. The Peel Musquash, with dark, blackish-brown patches on a white ground.
3. The White Musquash (Fiber Zibethicus-albus, Sabin). This Albino is not unfrequent. Dr. Richardson saw several.

According to Herne, the Musquash is easily tamed, soon becomes attached, and is cleanly and playful.

The fur is used in hat-making, and there is, according to Dr. Richardson, an annual importation of between four and five hundred thousand into Great Britain from North America for that manufacture. Charlevoix also notices the employment of the fur in the hat trade.
rendered his observations on this subject more complete in the introduction to natural philosophy mentioned above. He greatly extended the science of magnetism by his memoir in the present work, though he improved his knowledge at a later period respecting the laws of magnetic attraction, and in 1749 published his large work, which is rendered and commended.

3. 'Dissertatio Physica Experimentalis de Magnete,' 4to. Vienna.

In 1742 Muschenbroek published, at Leyden, in 4to, a Latin translation of the 'Saggi di Naturali Esperienze fatte nell' Accademia del Cimento,' which appeared in Florence in 1657. This work, valuable in itself, was rendered much more so in the translation by the numerous notes and additions of Muschenbroek, which contain an account of the discovery of the attraction of the bodies of dead bodies by heat, and also a description of a pyrometer which he had invented, and which was the first instrument of the kind which had been made.

Besides the above works Muschenbroek delivered several public orations, which have been published. He also wrote many papers on meteorology (a subject to which he paid considerable attention), some of which appeared in the 'Memoirs of the French Academy of Sciences,' and some in the 'Transactions of the Royal Society of London.' He published some observations on the Lunars, in the 'Memoirs of the French Academy of Sciences' for 1746; and a 'Dissertation on Barometers,' which was printed in the 'Memoirs of the Academy of St. Petersburg.'

MUSSELS. — The Musse, or mussel, of which the shells are used as a food, is a fresh-water animal, appearing among the brachiopoda, which are a class of mollusca. The shells are encrusted with a variety of substances, and contain a thin organic lining, which is separated from the shell by a водяная "водяная" substance. The mussel is a bivalve animal, and is common in fresh and salt waters, and in the muddy bottoms of the sea. It is a very abundant species, and is found throughout the world, where it is a food for the inhabitants. The mussel is a valuable animal, and is used for the manufacture of fish food, and for other purposes.
MUTAPHA II., son of Mahomet IV., succeeded his uncle Ahmed II. in 1693. In the following year he defeated the Austrians at the battle of Varna, but was defeated in September, 1697, by Prince Eugene, near Zenta in Hungary. The seraskier in the mean time had reconquered Chios from the Venetians. By the peace of Carlowitz, in 1699, the sultan acknowledged the decision of Venice over the island, which was ceded to him upon the death of Dalmor, and gave up Azof to Russia, and Kaminiek to Poland.

Mutaapa then withdrew to Adrianople, where he gave himself up to sensuality. His neglect of the public affairs caused a revolt to break out in the capital, and the insurgents marched upon Adrianople, and at the same time offered the throne to Ahmed. Mutaapa's brother, who took the title of Ahmed III. Mutaapa died in confinement, it was reported by a natural death, six months after his deposition, in 1703.

MUTAPHA III., son of Ahmed III., succeeded his cousin, Othman III., in 1757. He had been strictly confined in the seraglio ever since the deposition of his father in 1730, but after ascending the throne he showed considerable spirit and character and threw a great deal of power into the administration. He engaged, in 1759, in an unlucky war against Russia, in which he lost the Crimea and Bessarabia, but did not live to see its termination. He died in 1763, and was succeeded by his brother, Abdul Hamid. His son Selim afterwards succeeded Abdul Hamid, in 1789.

[Selim III.]

MUTAPHA IV., son of Abdul Hamid, was placed on the throne by the janizaries, who had deposed sultan Selim III., in May, 1837. Mutaapa was ignorant, weak, and cruel, and a tool in the hands of the janizaries. Mutaapa Bairactar, pasha of Ruda-huk, and a friend of Selim, collected an army and marched to the rescue of his master. He entered Constantinople and attacked the seraglio, and deposed Mutaapa, who was put in gaol; but he should be put to death, they gave him up, but it was only the dead body of Selim, for he had been strangled by order of Mutaapa at the approach of his deliverers. Bairactar deposed Mutaapa, and placed his brother Mahmood on the throne, in July, 1838. In the following November a revolt of the janizaries broke out, which lasted three days, and a great part of Constantinople was burnt down. Bairactar, Mahmood's grand-vizier, perished in the flames; and the janizaries, being tried, were sentenced to death. Mutaapa, who had been deposed, Mutaapa was made to put his brother to death. Mahmood was now the sole remaining prince of the Ottoman dynasty, and the janizaries submitted to him, after making their own conditions. A vivid account of these fearful transactions is given by Macfarlane in his 'Constantinople in 1829.'

MUSTARD. [Salani.]

MUSTELA. [Weasels.]

MUSURUS, MARCUS, a native of the island of Candia, emigrated to Venice about the end of the fifteenth century, and taught Greek in that city with great success. He edited several Greek works, which were printed by Aldus Manutius. Afterwards he proceeded to Rome, where Leo X. showed him great favour, and nominated him bishop of Epidaurus in the Morea. He died at Rome in 1517. He published the first edition of Athenaeus, printed by Aldus, Venice, 1514. Musurus published also the 'Etymologumena,' folio, Venice, 1499, printed in 1549, in 1594, and 1710; and some Greek epigrams and other poetry, among others a poem in praise of Plato, which he prefixed to his edition of that philosopher's works, and a Latin verse by Zenobio Acciaioli, 'Carmen in Pisonem,' Cambridge, 1517.

MUTE. [Dread and Dumb.]

MUTINA. [Modern.]

MUTINY ACT is a series of regulations which, from year to year, have been enacted by the British legislature for the government of the military force of the country.

Laws have, at various times, been made by the authority of the crown for the maintenance of discipline in the army when in garrison, or on a march, and in the presence of an enemy. They are contained in an act on Military Law, and may be seen at length in Grose's 'History of the English Army' (vol. ii.), but the code which is now in use is one of the first fruits of the Revolution in 1688. Previously to that event the crown, except during the civil wars and the subsequent protectorate, had, at least practically, the supreme power over the militia (that is, over the whole military force), which, with the consent of the crown, was called out and employed as long as pay and quarters could be obtained for the troops. But the efforts then recently made to carry on a series of measures tending to the maintenance and extension of arbitrary power in the crown, joined with the consent of the people, religious liberties, led the two houses of parliament to take the earliest opportunity, after the new king had been called to the throne, of expressing in some public act of legislation their authority over the whole forces. The King, in consequence of this event, and on the spur of the moment, a bill was passed (April 12th, 1689) by which the army was put once more under the control of the law with respect to discipline, and by which it was made quite distinct from the crown.

The enactments of this bill were particularly directed against the crimes of mutiny and desertion, for which the bill was immediately required; but the Act itself begins by laying down as maxims that the raising or keeping a stand of forces being without the consent of parliament, is against law; and that no man can be prejudged of life or limb, or subject to any kind of punishment in any other manner than according to the established laws of the realm. It then states that it was the opinion and practice of the generals (who were during the present time of danger and for the defence of the Protestant religion, to continue and augment the forces which are now on foot). Avoiding the acknowledgment that any power exists in the crown for the appointment of court-martial, it authorized their magistrates to grant commissions to general officers to assemble such courts for the purpose of trying and punishing such offences as mutiny and desertion. Provisions are also made that nothing in the Act is to be construed to diminish, impair, or annul any of the existing processes of law; that it shall not remove the military troops, and that it shall only continue in force till the 20th of November in the same year. The Act has ever since with one exception, been annually renewed: after the bill expired in April, 1797, no bill was passed till March, 1792; and on few occasions, the bill has been suffered to expire for seven days before the following one received the royal assent.

The Mutiny Act has, with time, varied in many particulars from that which was first passed, but it has been in form in all its principal points; such as the dependence on the standing army on the consent of parliament, and its exclusion of military men to all the processes of ordinarv law. Instead therefore of officers of court-martial being met by the crown, the king himself or his commissioners by writs of habeas corpus, in the courts of king's bench, and suspended, or indeed, if it could not be done, they were annually renewed: after the bill expired in April, 1797, no bill was passed till March, 1792; and on few occasions, the bill has been suffered to expire for seven days before the following one received the royal assent.

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ing to the enemy any garrison, fortress, or post; compelling or using means to induce the governor of such garri-
sion to do so; quitting his post without leave, or sleeping at his post; holding correspondence with the enemy, or enter-
ing into terms with the enemy without licence; striking a
superior officer, or disobeying his lawful commands; and,
finally, in deserting the service. For all these offences the
Act prescribes 'death, or such other punishment as a gene-
ral or a major shall award.' A clause of the Act enume-
rates the military offences of minor importance which may be
tried before a district or garrison court-martial: these con-
sist in a non-commissioned officer or soldier wilfully maim-
ing himself with the weapon of his office; maiming or
feasting disease; stealing government stores; stealing
from an officer or a comrade; procuring false accounts;
embezzling public money; and, lastly, in any fraudulent
and disgraceful conduct. For these offences may be
awarded corporal punishment, imprisonment, forfeiture of the addi-
tional pay to which, for length of service, the individual
might be entitled, and forfeiture of pension on being dis-
charged. And in another clause it is stated that imprison-
ment, with or without hard labour, or solitary confinement,
may be awarded by regimental court-martial for drunk-
eness, or insubordination on parade or on the line of
march.

Besides the above laws, which relate particularly to the
desertion of the East India army, there are a number of
provisions of courts-martial; it contains clauses relating to the
enlistment of recruits, the issue of pay and marching
money, the quartering of soldiers, and the supplying of
carriages for the conveyance of troops and baggage. The
Act further declares that the army in India has been proclaimed
by the East India Company, and it is declared which it is included
that the ordinary course of law is not to be
interfered with when a soldier is accused of a capital
crime; and it states that a man cannot be taken from the
service for a debt under 90l.

The Mutiny Act is declared to be applicable to all persons
employed in the recruiting service; to the forces of the
East India Company while in any part of the United
Kingdom, and till their arrival in the territories of the Company;
to the officers and men employed in the
British dominions abroad, the corps of sappers and miners;
to the military surveyors and draughtsmen in the ordnance
department; and to foreign troops serving in any part of the
British dominions abroad. Its provisions are also stated
to extend to the islands of Guernsey, Jersey, Alderney,
 Sark, and Man. In one of the clauses it is expressly men-
tioned that nothing in the act extends to any of the military
forces, or seapower, or volunteer corps in Great Britain or
Ireland; it is understood however that its provisions are
applicable to all forces when on service, and to officers holding rank by brevet, though not to such as are
on half pay. An effort was made in 1749, when the bill
was introduced as usual into parliament, to subject officers of
the class to martial law, as well as vessels belonging to the
sea forces by the East India Company. Before the union of Ireland with Great Britain there
was a separate Mutiny Act for the former
country, but now the same act applies to both. The officers
and troops of the East India Company are subject to their
own Mutiny Act, which however agrees exactly with that of
the government forces.

Previously to the year 1750 the members of courts-martial
were bound by an oath not to disclose the ground on which
gave their votes; but in that year the minister for
war recommended that the members of such oath when required
give evidence in any court of justice or court martial. The
power of disclosing, in that case only, the votes or
opinions given is implied in the forms of the oaths which
are now taken by the judge-advocate and members of the
court-martial, and which are printed among the schedules
to which the act refers. The act of the same year also con-
tains a clause, in which it is stated that no sentence pro-
ounced by a court-martial, and signed by the president,
shall be null and void if the general officer had power to order the revival of any sen-
tence as often as he pleased, and thus he might retain in
confinement a man who had been acquitted on a fair
trial.

The gradual extension of the provisions of the Mutiny
Act to those military offences which may be considered as
secondary in the scale does not seem to have been noticed
in behalf of the crown further than by the occasional
remedies out of its right to make Articles of War for the better
government of the forces, which is expressed in the acts
passed during the reign of Queen Anne. In the first
year of George I. this right of the crown was formally
allowed; and the clause containing it has been repeated in all
subsequent mutiny acts, with the exception that the individu-
als person within the United Kingdom and British Isles shall be
subject to transportation, or to any punishment affecting
life or limb, for crimes specified in the Articles of War, except
punishments as by the Mutiny Act itself are liable to the same
punishments.

The Articles of War which are at present in force, and
which have from time to time been promulgated, are divided
into twenty-four sections. Many of these correspond ex-
actly to clauses in the Mutiny Act; or relate to subjects in the latter, define the particulars of the crime
and the punishment applicable to it with more precision;
and there are articles which have no counterparts in the
act. The first section of the Articles of War relates to divine
worship, frequent attendance on which is prescribed, and
punishments are awarded for profaning the places in which
it is celebrated, as also for scandalous or vicious behaviour
in a chaplain. The seventh section contains fifteen articles
relating to quarrels and the sending of challenges; and
the fourteenth contains twenty-one articles concerning the
duties of troops in quarters or in the field. Many of these
articles prescribe for the offence 'death, or such other
punishment as a court-martial may award,' and two of
them prescribe for the offences committed out of court.
The first of the crimes here mentioned is that of doing
violence to persons bringing provisions to the camp,
and the other is that of ill-treating a person to whom a safe
conduct has been given by the army in being on
service in foreign parts. The fifteenth section settles
the relative rank of officers in the regular army; and the
twenty-second the rank of officers in the royal army and in
that of the East India Company, when serving together.

The law of 1756, which amends that of 1749, makes it
implied that the court-martial is a board of officers drawn
while employed on board any ships having a royal commis-
ion shall conform to the laws and regulations established
for the government and discipline of the navy.

The above articles being made by the crown as head
of the army, or by the commander-in-chief, are to be obeyed
as being the commands of a superior officer; but the writers
on military law observe that the legality of the articles may
itself become the subject of examination in a court-martial,
whereas the Mutiny Act must be obeyed in the interest of
the army. In this particular therefore the Articles of War are to be dis-
tinguished from the Act; and whatever case may occur the
letter only of the law, as contained in the Act, must be fol-
lowed in awarding the punishment due to a crime affecting
the army.

The bill on which are founded the Articles of War for the
Navy was passed in the 22nd Geo. II., and this consolidated
all the laws previously made for the government of the
Navy, and put them on a footing with the army, and vests
royal commissions, as also of the officers at sea. Among the
officers who are put into the regime of the articles of mutiny,
instutute the crime of mutiny, are the running away with the ship, or
with any ordnance, ammunition, or stores belonging to the
same; neglect of duty, joining in or using means to
produce any mutinous assemblage of persons, uttering
mutinous or seditious words, or concealing any mutinous
intention, and striking an officer or disobeying his lawful
commands. Of the thirty-six articles, nine relate to crimes
for which the punishment of death is discretion in the
court-martial, is awarded; and there are twelve to
which are assigned 'death, or such other punishment as
the nature and degree of the crime shall be found to
deserve.' Two of these were originally in the former class,
and the qualifying clause was added in the 19th Geo. III.
Except this alteration, none has been made in the navy act
since it was passed.

MUTIRA. [Hindustan. vol. xii. p. 219.]

MUZARAB, i.e. a Christian living under the sway of
the Arabs. Variety has been given to this word. Some pretend that it comes from the two words
Musa and Arab, and that it meant in the first instance
those Christians who capitulated to Musa at the time of
the conquest, and were allowed to retain such of their
Medians as Spain designated the Christian population of
their cities; others derive it from Muzita-Abuses, i.e. Christians
mixed with the Arabs. The absurdity of these etymo-
logies need not be dwelt upon. Musa granted no equiva-
lation to the Christians of Spain in general; but if the

F 2
Arabs had wished to give a distinctive name to the Christians subject to their rule, it is not likely that they would have employed two Latin words to designate a people living under their sway and in the midst of the Spanish Christians. The derivation of the word Muzarab is the Arabic Mustarah, afterwards corrupted into Muzarab, which means a man who tries to imitate the Arabs, or to become one in his manners, language, and habits; and who, although knowing a name familiar to Christians from the Moors of Spain and from the Moors of Spain and the Spanish Christians, he might not have understood the true derivation of the word Muzarab is better known to us as connected with the antient liturgy of the Gauls, which governed the Spanish church down to the twelfth century, and was called "Muzarabie Office" (Missal Muzarabbe), owing to its being preserved by the Muzarab Christians of Toledo during the time of their submission to the Moors. The fact that the Muzarab liturgy is singular enough. Though involving the same doctrines, it differed widely from the other offices of the church; it also contained many hymns composed by St. Eugenius, St. Isidore, St. Julian, St. Leon, and other great luminaries of the Visigoths. To produce uniformity in this respect, and substitute the Roman for the Spanish missal, became the principal aim of the holy see. Early in the tenth century a legate arrived in the Peninsula from Rome, sent by the Pope, who, like all the notabilities which he met on his return, was to be a favourite one, and by the decision of a council, held at Rome, in 924, the Muzarab office was not only sanctioned, but even praised. Another attempt, made in 1066, under Alexander II., had a similar result. As when the legates were sent, with a positive injunction to insist on the abolition of the antient service; but the Spanish prelates resisting the innovation, the subject was laid before a council assembled at Mauits, and the Spanish missal was once more declared Catholic and orthodox. Still the holy see persisted in its object. No article or intrigue was spared; and the court of Castile was divided into two hostile factions, one in favour of and the other against the introduction of the Roman ritual. In the perplexity occasioned by the dispute the two sides resolved to leave the decision to the judgment of God, and the expeditious adopted to discover the divine will was this: two wild bulls were procured, the one to represent the Roman, the other the Muzarab Liturgical, and, in the presence of the king and the court, were matched against each other. After a bloody conflict, the Muzarabie remained victor. But this result did not deter Gregory VII. In 1087 the trial was repeated: a champion was chosen on each side, and the decision left to the two bulls; but again victory descended to the antient Liturgy. Fire was then tried, and both missals were cast into the flames; but, if we believe the archbishop Don Rodrigo, who was present at the ceremony, the success was still more signal: for no sooner did the Roman volume touch the flames that jumped out of it, than while the Spanish remained for a considerable time in the midst of them without receiving the least injury. The object was at last gained by other means. Alfonso, the renowned conqueror of Toledo, was won over to the interests of Rome, and, after much trouble and difficulty, he prevailed on the prelates of the kingdom to receive the universal office; and from that moment the Muzarabie, although not publicly condemned, fell into disuse. There is however still a chapel in the cathedral of Toledo where mass is performed every day agreeably to the Muzarabie ritual. It was founded by Cardinal Ximenes de Cienegro. (Aguire and Catalanis, Collectio Magna Conciliaurum, tom. ii., p. 692; Mauius, ii., p. 126; Mariano, Historia General de España, lib. ix., chap. xvii.; Flores, España Sagrada, tom. iii., p. 187; Missale Gothicum secundum Regulam Beati Isidori Hieronymi, Roma, 1604.)

MYA. [PYLORIDEA].

MYÁRIA, Lamark's name for a family of Dinymarian conchifers, consisting of the genera 

[PYLORIDEA].

MYCÉ, [TONIA.]

MYCÉNE, an ancient town and state in Northern Peloponnesus, founded, it was said, by Perseus, and which in the time of its king Agamemnon was the most powerful state of Greece, ruling over the greater part of the Peloponnesus, besides many islands. [AGAMEMNON.] The small kingdom of Argos was then subject to Mycenæ. But after the death of Agamemnon and the extinction of the dynasty of Atreus, Argos gained the ascendency over Mycenæ, which however appears to have maintained a sort of independence, during the Persian war, Argos did not send any assistance to the Northern Greeks, but the contingent from Mycenæ was present at Thermopylae. This added to the grudge which Argos bore against Mycenæ for its pride in declaring itself independent; the latter, on the other hand, as in the Persian campaign, while Sparta was distracted by intestine commotion and afflicted by the consequences of an earthquake, the Argians, being joined by the people of Tegae and Muzarabie, attacked Mycenæ, which held out till its last resistance was raised to the ground, a.c. 468. Part of the inhabitants were made slaves; the rest emigrated to Cyrene, Crete, and even to Macedonia. (Diodorus, xi.; Herodotus; Pausanias.) Mycenæ never rose from the ruins, but these ruins, contrary to the assertion of Strabo (Caz., 372-377), who evidently had not visited the spot, were, and still are, of considerable magnitude, and very remarkable. In the time of Pausanias (ib. ch. 15, 16), it consisted of a great part of the walls, with the gate called that of the Lions, from being being sculptured above it, said to be the work of the Cyclopes; the fountain called Perseia; and the subterranean buildings of Atreus and his sons, in which their treasures were deposited. There was also a temple of Apollo, erected under the direction of his charioteer Euryelemos, of Electra, and others. ('El Cytresmeastra et Aristi,' adds Pausanias, 'were suffered at a little distance from the walls, being thought unworthy of burial where Agamemnon lay and those who reigned with him.'

The ruins of Mycenæ have been visited in recent times, among others, by Lord Elgin, by Cockrell, Dodwell, and Leake. We extract from the latter an account of their present appearance. Mycenæ was built upon a rugged height in a precipitous chasm between two mouths, supposed to be the ancient Argo-sauroctoon, or the Profile of the Argive horse and the other subterranean remains, viz.--the ruins of the hall of the Mycenaean court, the entire circuit of which is still seen, the ruined wall which has occasioned many other fortresses in Greece, being built on the summit of a steep hill between two torrents. Its length is about 400 yards and its breadth about 200. The ground rises considerably within the enclosure; on the summit are the openings of subterranean cisterns, or granaries built of large irregular stones lined with plaster. It has a great gate at the north-west angle and a postern towards the north-east. The door-case is formed of two massive upright blocks of granite, 10 feet 4 inches high, 5 feet 8 inches wide, and 6 feet 7 inches thick. Upon this stands a triangular stone of green basalt 12 feet long, 10 feet high, and 2 feet thick, upon the face of which are represented in bas-relief two lions standing on their hind legs, one on each side of the door, a round stone, 4 feet 3 inches in diameter, bearing the figure of a lion, with its paws spread. The pillar becomes broader towards the top and is surmounted with a capital formed of a row of four circles enclosed between two parallel fillets. Below the Acropolis, in the direction of the modern village of Khurvat, the Spill, or subterranean chambers, known in the time of Pausanias by the name of the treasury of Atreus. The largest of these chambers, which is of a conical form, is about 50 feet in diameter at the base. The door-ways are ornamented with half lions' heads where new perfumes are placed. There are some other peculiar ornaments, minutely described by Leake, who gives sections of the chambers, as well as a plan of the ruins of Mycenæ. (Travels in the Morea, vol. ii.) 'Nothing,' observes Leake, 'can more strongly show the extreme antiquity of the remains at Mycenæ than the singularity of some parts of them and their general dissimilarity to other Hellenic remains. We find nothing in Greece resembling the lions or the columns before the gate of the great Tresaur, the tooling is the most beautiful, the temples belong to the temple, the architraves themselves resembling the largest part of the architecture there is not to remarkable a difference between the Cyclopean ruins and the other most ancient ruins remaining in Greece. In the walls are found specimens of construction of various ages, but the later repairs are evidently reconstructed from the smaller stones and called Cyclopean; and with this exception, everything left at Mycenæ dates of the heroic age. Notwithstanding this remote antiquity, the description of Pausanias shows that Mycenæ has undergone less change since he travelled than any place in Greece.
MYCETES, Illiger's name for a genus of Quadrumanus, consisting of the largest monkeys of America, remarkable for the powerful development of the organ of the voice. The species are, as the name implies, Howlers, and the horrible yells sent forth by these animals from the depths of the forests are described by those who have heard the mournful sounds as surprisingly distressing and unearthly. Humboldt and Bonpland heard the Araguato, one of the species, at the distance of half a league.

The genus is distinguished by a pyramidal head with the upper jaw descending much lower than the cranium, while the lower has its ascending rami very high, to afford room for the bony drum formed by a convexity of the os hyoideum, which communicates with the larynx, and gives to the voice the enormous volume above alluded to. Humboldt gives the following as the external form of the drum in this genus.

Drum of Howling Monkey

The tail in this genus is prehensile, and the part applied by the animal when laying hold of a branch or other body is naked below; so that such portion must have a higher sensibility of touch. M. F. Cuvier gives the following as the dentition of the Howling Monkeys, from the Alouate fascie.

Teeth of Howling Monkey. (P. Cuvier.)

Mr. Swainson (Classification of Quadrupeds) observes that it is rather singular that M. F. Cuvier should not have specially noticed the remarkable size of the canine teeth in the Howlers, which he says are uncommonly large; and adds that in a specimen before him when he wrote, they are nearly six times bigger than the cutting-teeth, a structure which at once separates this group from the genus Cebus. Facial angle about 30°.

Cuvier, in common with most other zoologists, places the genus at the head of the monkeys of the New Continent.

Mr. Gray (Annals of Phil., 1825) places the form among the Anthropomorphous Primates in the second family (Sariguidae), and as the sole genus of its first subfamily Mycetina.

M. Lesson arranges it between Lagothrix and Cebus.

Mr. Swainson makes Mycetes the first genus of the Cebidae, the second family of his first order Quadrumanus.

Mr. Ogilby observed in the summer of 1829 that two living individuals of Mycetes semiculus did not use the extremities of their anterior limbs for the purpose of holding objects between the finger and thumb, as is common among the Quadrumanus; and he ascertained also on closer examination that the thumb, as it has generally been considered, was not in these animals opposable to the other fingers, but originated in the same line with them. Struck with the apparent singularity of the fact, he was induced to pay particular attention to all the other animals referred by zoologists to the Quadrumanous family to which he had access; and the continued observation of more than six years assured him that the non-opposable character of the inner finger of the anterior extremities, which he first observed in the specimens referred to, is not confined to the genus Mycetes, but extends throughout the whole of the genera of the South American monkeys, individuals of all of which had been seen by him in a living state. He remarked that a true thumb existed on the anterior limbs of none of them, and that consequently they have been incorrectly referred to the Quadrumanus by zoologists generally. [Chiroptera; Quadrumanus; Simiade.]

The habits of these animals are social, and most of them have thick beards. Their deep and sonorous yells are supposed to be a call to their mates; in short, to be a hideous love-song. In their gregarious habits and howlings they may be considered as bearing some analogy to the Gibbons of the Old World [Ann. vol. ii. pp. 149, 150; Hylabates]; whilst their low-facial angle has induced some to look upon them as representing the baboons of the antient continent.

Geographical Distribution of the Genus. — South America.

Example, Mycetes Ursinus (Stentor Ursinus of Geoffroy). The Araguato.
Mycetum sernutum (Moro colorado of Humboldt), of a golden red, but the beard, which is of a deeper colour than the rest, is less bushy than it is in *M. seniculius*; and the circumference of the face where the hair is red is also paler. Humboldt states that the eye, voice, and gait denote melancholy. He says young ones brought up in the Indian huts, which never played like the Sagoinis. [JACCRUS.] Lopez de Gomara speaks of the Aragua do de los Cumanenses as having the face of a man, the beard of a goat, and a grave demeanor. Fruit and the leaves of plants form their food. They construct their nests on the shoulder. Humboldt counted above forty upon one tree, and he does not doubt that upon a square league of the wild countries frequented by them above two thousand may be found. They were in great abundance near pools of stagnant water shaded by the *Mauritia flexuosa*.

**Localties.** Brazil, Venezuela, &c.

MYCETOPODA, or MYCETOTUS, a genus of con-

chiers with elongated valves, established by M. d'Orbigny, and referred to the family Naiade of Lamarr. M. d'Orbigny states that this genus perforates like the Photo-

lader.

MYCONOS, MICONI, one of the Cyclades, is situated east of Delos, from which it is separated by a narrow chan-

ne, about 40 miles in length and 6 in its greatest breadth. The island is mountainous and not very fertile: it produces some corn, wine, and cotton, but is deficient in wood. The population is about 4000, according to Thierrus. The men dress and the women are habited (Dappor. Description des Iles de l'Archipel; Spon; Por-

cachi; Baudrund). According to the ancient fable, the Centaurs killed by Hercules were buried in this island, from whence came the proverb, 'to put all things under one My-

conas,' applied to those who were apt to rage under one class things naturally disparate. (Strabo, Casuab. 487.)

The inhabitants, being poor in their own country, had the reputation of being parasites at other people's tables, and hence the proverb 'Myconian guests' for people who invited themselves. Miconi belongs now to the new kingdom of Greece.

**MYCETRIA** [JABIECE].

**MYDAS** [WASELS].

**MYGALLE** (Mammaluya). [SORCIDE].

**MYGDONIA.** [MACEDONIA; MESOPOTAMIA].

**MYIAGRA.** [MUSCIPADIE].

**MYLONDON.** [Megaatheride, vol. xv., p. 70].

**MYCINCLA.** [MELVILLE].

**MYPHONOS.** [MELVILLE].

**MYPORACEAE.** Are a natural order of plants, distinguished from Verbenaceae by little except the ovules being pendulous and the albumen more abundant. The plants referred to Myoporaceae are chiefly shrubs of little interest, inhabiting the Australian regions and other parts of the southern hemisphere. The most remarkable thing connected with them is the presence of cysts of oil in their leaves, which thence have a dotted structure. The White Mangrove, a shore plant rooting in mud, is a curious species. Brown describes its roots as creeping to a considerable distance, often curved above the ground as much as six feet before theyfix themselves, and throwing up naked suckers out of the mud in great abundance, which look like shoots of asparagus.

**MYTOPOTAMUS.** [COYPOU].

N B. It is now ascertained that the Coupou has a lig-

ament in the animal, which he had received from Mr. Oley of Exeter, and read the following extract in a letter from the gentleman:

'-I have enclosed with this the thigh-bone, and the *Typula, clivicollis, and humerus of a Coupou*, which came into my hands after having been mangled by a stuffer of ani-

mals, and which had been preserved alive for some weeks by a gentleman in this place. I believe that not many oppor-

tunities have occurred of dissecting this animal in Eng-

land; and as I found a difference between the specimen in question and that described by Mr. Martin, I thought the portions I have forwarded might be interesting to you, had it not been to you to dissect one of these animals. Mr. Martin states that the thigh-bone had no round ligament, you will see that there exists a well-developed one in this, as there also was on the other thigh-bone.'

Mr. Martin observed, that, referring to his account of

the dissection of this animal, it will be found that he is so far from asserting it as a fact positively determined, that the *ligamentum teres* is wanting; that, after having an account of the state of the acetabulum and head of thighbones as he found them, he adds, 'It would be desirable that another specimen should be examined before the pe-

cularity (namely, the absence of a *ligamentum teres*) is insisted on as an ascertained fact.' (Zool. Proc. 1825.)

Mr. Darwin (Journal and Remarks) notes this animal is common among the broken islands of the Chonos Archi-

pelago, where it exclusively frequents salt-water. The same

author remarks that the Coupulou or Curicaucho ([Hyo-

coroidea]) occasionally frequents the islands in the mouth of the Plata, where the water is quite salt, though it is far more abundant on the borders of fresh-water lakes and rivers.

**MYOSOREX.** [SORICIDE].

**MYTOPHONUS.** [MANTIDE].

Cuvier remarks that M. Vieillot has changed this name into *Myromyths*.

**MYXUS.** [MURIDE].

**MYRABA.** Dr. Horsfield's name for a genus of birds arranged by Mr. Swainson as a subgenus of *Calcudina*, in the subfamily of Alaudinae of the family Fringillidae.

**MYRIAD (populus), the Greek term for ten thousand, usually employed in our idiom for an indefinite but very large number.

**MYRICA/CÆs.** Are plants constituting a very small natural order of spatulate Exogens, with separate sexes. The most essential part of their character is expressed by

Endlicher in the following terms: 'Flowers unisexual. Males: Bracelets, 2; calyx, 0. Females: Hypogynous scales from 2 to 6; ovary one-celled, with 2 styles; ovule 1, erect, orthotropous; drupe one-seeded, seed erect; en-

ghy without albumen; radicle superior.' In general that

flowers are arranged in a manner similar to those of Beils-

laceae and Salisaceae, with which however they seem to

have no real affinity. From Casuaraceae, curious New

Holland trees, with jointed leafless stems, like those of Equisetum, they are only distinguished by their erect ovule and orthotropous seeds. They are common in the temperate

parts of the world, especially in North America and the

Cape of Good Hope. With us the only species is the

Street Gate, a common fragrant bush inhabiting wet ca-

mons. They are all more or less fragrant and ornate;

and one of them is called Myrica cerifera, or the wax

bearing, from the drupes being covered with a waxy secre-

tion, which may be readily separated and manufactured into

wax candles; whence has arisen its popular name of Candleberry Myrtle.
noco Islands, especially of Banda, but cultivated in Java, Sumatra, and elsewhere in the East, and lately in Ceylon and several of the West India Islands. It yields nutmegs and mace, the best of which are produced in the first-mentioned islands. The fruit is of the size and form of a peach, and, when ripe, the fleshy part separates into two nearly equal halves, exposing the kernel surrounded by an arilus, the former being the nutmeg, the latter the mace. The arilus, when gathered, but being sprinkled with water and dried, it assumes an orange-yellow colour. It has a fatty shining appearance, yet is horny and brittle. The odour is strongly aromatic; the taste aromatic, but sharp and acrid. It contains both a fixed oil (in small quantity) and a volatile oil, which is obtained by distillation one ounce of the latter. The former is not an article of European commerce, and what is termed the expressed oil of mace is obtained from the nutmeg, and should bear its name. An inferior mace is obtained from various species of Myristica, especially the M. tomentosa and M. officinalis (Martius), which is a Brazilian tree. The properties of mace are similar to those of the nutmeg.

On the removal of the mace is seen the shell, of an oval or ovate shape, and of a dark brown colour, in which is contained the seed or nut. This is closely invested by an inner shell or coat, which dips down into the substance of the albumen of the seed, and gives it the character which is termed ruminated. Two or three gatherings of the nutmegs are generally in July, generally in July, and in December, and in April. The third period yields the best nutmegs. The collected nuts are dried in the sun or by the heat of a moderate fire, till the shells split; they are then sorted and dapped in lime-water, to preserve them from the action of insects. The nuts are of the size of a hazel nut, but with a flurred or sculptured surface. Those of good quality should be heavy, each weighing on an average 90 grains. The internal aspect is marked and sad of a fatty appearance. The substance is grey, but the veins which are of a reddish-brown, consist of cellular tissue abounding in oil, and are the processes of the internal cost already mentioned. Odour agreeable, strongly aromatic. Taste warm, aromatic, oily.

Besides the fixed oil, it contains a volatile oil, lighter than water, of the specific gravity of 0.931-47, while a spurious oil of nutmeg is only 0.871. By keeping it deposits a sterculianum, or Muscat-cambor, called Myristicina. The solid or fixed oil consists of stearine and cliane, with a slight person of volatile oil intermixed. Both the fixed and volatile are used for medical purposes. Of the fixed there are two varieties, the English and Dutch, of which the former is the better. It occurs in pieces, wrapped in leaves of the banana, weighing about three-quarters of a pound. When cut, it is of a yellowish uniform colour. A patchsort is in larger pieces, wrapped sometimes in leaves, sometimes in paper, and of a lighter yellow colour. Both are frequently adulterated. The volatile oil is also mixed with purified oil of turpentine. Nutmegs are frequently used in distilled alcohol, or distilled to abstract the volatile oil, and then passed off as fresh. Such nutmegs are lighter, and, when a hot needle is inserted, do not give an oily coating to it. Old, worm-eaten, or wild nutmegs should be rejected. Genuine or cultivated nutmegs are called female, to distinguish them from the male or wild nutmegs, which are the produce either of the M. moschata, Var. sphenocarpa, or of M. tomentosa, Thunb. These are longer, heavier, weighing generally 110 grains, and of inferior quality. They are more likely to cause narcotic symptoms, giddiness, &c., than the true sort. Nutmegs and mace, from the large quantity of volatile oil, are decidedly stimulant, and when used in abundance, produce, by exciting the circulation, narcotic effects. In moderate doses they promote the appetite and assist digestion. Either when grated, or when a few drops of the volatile oil are put on sugar, they relieve flatus and colicky pains. They are chiefly used as additions to other medicines, to quicken the perspiration, or cover their taste. They should be obtained from by persons having a tendency to apoplexy.

[AROMATICS.] The fixed oil is employed externally as a rubefacient in rheumatism and other diseases.

MYRISTICACEAE. Are tropical, fragrant, aromatic trees with an astringent juice, alternate, coriaceous, simple leaves, without stipules, and discolorous flowers. Of the flowers the males have monadelphous stamens, the females a single one-celled ovary, containing an erect seed, and both have for calyx a tubular, coriaceous envelope, with from 2 to 4, usually 3, valvate teeth. Their fruit is a two-valved succulent capsule, containing a single seed enveloped in an aril, and consisting of ruminated albumen, abounding in a powerful and agreeable aromatic secretion; the embryo is very small, and placed in a cavity at the base of the albumen.

The order is nearly allied to Annonaceae, from which however it differs very remarkably in the total want of a corolla, and in the reduction of the number of carpels to one. To station it in the artificial division of apetalous Exogenous, as is usually done, is to violate every principle of natural classification.

The Nutmeg of the shops, which is the seed of Myristica Moschata, is the only product of the order employed officinally. [MYRISTICOS MOSCHATA.] Other species bear fruit that may be employed as a substitute, but they are all inferior to the real oriental Myristica. Three genera of the order have been distinguished, namely, Myristica, inhabiting the tropical woods of Asia and America, with Knema and Pyrrosia, both confined to the tropics of India.


MYRMECOPHAGA. [ANT-EATER.] N.B. In November, 1831, a letter from Sir R. Ker Porter was read to the Zoological Society of London, giving a detailed description of the Myrmecophaga jubata, Linnaeus, under the name of Oso Hormiguero, or Ant-Bear, accompanied by a drawing of the full-grown individual from which the description was taken. The writer was particularly struck with the difference in structure which exists between the fore and hinder feet, and with the curious disposition of the parts of the former in the act of progression, which has been slightly referred to by D'Azarra. In the figure (in which the animal is represented in a standing position) the claws of the fore-feet do not project in front, but are doubled backwards under the wrist, evincing a mode of progression in the Myrmecophaga similar to that described by Colonel Sykes as existing in the species of Manis. [FANGORI.] To receive the additional length and point of the middle toe, according to Sir R. Ker Porter, a protruding mass of hard flesh stood out from the wrist, wherein was a cavity destined for the reception of the ungiulated elongation when the animal was in a standing position, and as, from the awkward formation of the fore-feet, quickness of motion becomes impossible, these animals may be caught in the smallest open space (when seen) with little difficulty.

FOSSIL MYRMECOPHAGA. See the article Megatheriidae, vol. xv., pp. 69, 72, and 73.
MYRMOTHERA. (Myothera.)

MYROSPERMUM, or Myroxylon Peruferum, yields the balsam of Peru, and probably also the balsam of Tolu, though this is generally referred to M. Toluiferum. It is doubtful whether these are distinct species, or the same tree slightly differing, from circumstances connected with the place of growth. The two kinds of balsam are so similar that there is no difficulty in believing the differences between them to be owing to a difference of age in the individual trunk from which each was obtained, or to differences in the mode of extraction or preparation.

Balsam of Peru occurs in two states; one called the white, the other the black. The former results either from spontaneous exudation from the bark, or from incisions made by the Indians; the latter is found in the form of small lumps or balls, wrapping the seed. At first it is liquid, the consistency of recent honey, of a light-yellow colour, of an agreeable odour, resembling vanilla, and a somewhat acid, bitterish, but aromatic taste. Its specific gravity is less than that of water. Heated in a platinum spoon it burns with a white smoke (which reddens litmus paper), and leaves no residual ash. It is completely soluble in alcohol, and also in ether, except some white material which separates from it. It contains much benzoic acid. By distillation with water it yields a volatile oil. By exposure to the air it hardens, and is then termed Opobalsamum siccum, which must not be confounded with the true Opobalsamum. [BALSAMODENDRON] Balsam of Tolu is also sometimes called Opobalsamum.

Black balsam of Peru is stated to be procured by boiling the resinous bark of the trunk and branches of the tree. Th. Martius conjectures that it is procured by subjecting these parts and the pods to a kind of dry distillation, or distillation in vacuum, similar to that by which turpentine is obtained from pine-trees. This balsam has the consistency of syrup, but does not solidify with age, is scarcely tenacious, of a blackish-brown colour, and not transparent, somewhat oily to the touch, odour agreeable, balsamic, resembling vanilla, of a soft, balsamic, bitterish, and enduring, scented igniting when in contact with flame; not yielding by distillation with water any volatile oil, and not perfectly soluble even in absolute alcohol. Its chief constituents, which cannot be termed volatile, are two kinds of resin, and benzoic acid.

Both sorts are extensively adulterated, chiefly with turpentine, copaiba, or volatile oils. One test of genuine black balsam is, when 1000 parts of balsam saturate 75 parts of pure crystallised carbonate of potash.

Balsam of Tolu flows from incisions in the tree, and is of the consistency of a strong turpentine. It is sent to Europe in earthenware jars or tin cases. It becomes tenacious with age, and in cold weather may be fractured, but melts again in summer, or with the warmth of the hand. It is of a yellow or brownish colour, transparent, with the taste and odour of the white balsam of Peru. This balsam likewise is much adulterated. All the three forms possess the ordinary qualities of balsamic substances, and, either in the state of syrup or tincture, are employed where such medicines are indicated. These have been already detailed [BALSAMS], and it is only necessary to state here, that their fragrance renders them pleasant adjuncts to cough mixtures, when the acute or active stage is passed, while the difference of price is the only reason for preferring one kind to another.

MYRRII. [BALSAMODENDRON]

MYRSINACEE are chiefly sub-tropical plants of the Exogenous class, so nearly the same in their fructification as the Primulaceous species of northern climates, that scarcely any valid mark of distinction can be found between them. The indigenous fruit in Myrsineacee is chiefly relied upon for the means of separating them. The general appearance of the two orders is however widely different; Primulaceae consisting of herbs with no development of woody matter, while Myrsinaceae, in all cases yet observed, are shrubs or trees. Many of the species have handsome foliage and gaily-coloured flowers, on which account they are frequently met with in gardens, but they are of no importance for useful purposes. Ardisia and Jacquinia are the two commonest genera.

Exogenous are polyvalent Exogens, forming a very distinct and important natural order of plants, exclusively inhabiting warm countries, and in all cases either shrubs or trees; an herbaceous form of the order is unknown. The most northern station of the species is the south of Europe, where the common Myrtle grows apparently wild. If this plant is taken as the type of the order, it might be said to consist of aromatic plants with opposite leaves, dotted with transparent oil-cysts, bearing irascandrous monogenous polygamous flowers, succeeded by an inferior succulent fruit; but this is the character rather of a section of the order, than of Myrtaceae considered as a whole. In this division are however included nearly all the species employed for the use of man. Among the table-fruits of the tropics are the Guava, yielded by different species of Psidium; the Rose Apple and Jamrassode, produced by Eugenia Malaccensis and Jambos; of spices, Cloves are the flower-buds of Caryophyllus Aromaticus; and Allspice is the dried berries of Eugenia Pimenta: all which are obtained from plants belonging to the same section as the common Myrtle; the aromatic fruits of that plant were indeed used as a spice before cloves and allspice became common.

The deviations that take place from the typical structure of the order consist partly in the fruit being dry and capsular, instead of fleshy and indehiscent, and partly in the organization of the interior of the fruit being reduced to a state of great simplicity; besides which the leaves are often alternate instead of opposite. Some of the species have no corolla, and there is in many cases a very singular tendency to consolidate the floral organs of all kinds.

The species with capsular fruit are principally found in New Holland, where, in the form of Eucalyptus and Leptospermum, they constitute one of the most striking features of the vegetation. [EUCALYPTUS. These plants abound in a powerful aromatic secretion, chiefly found in their bark, on which account they are found valuable for the tanner's purposes; while the aromatic principle is also abundantly secreted in other cases, as, for example, in Melaleuca Cajuputi, from which the green stimulating oil Cajuput is procured.

It is more particularly among these species that aromatical conditions of the floral organs occur. In Eucalyptus there is no corolla, and the segments of the calyx are so completely united to each other as to form a fleshy cap, thrown off by the flowers when the time arrives for extricating the stamens. In Melaleuca, Calothamnus, and several others, the stamens are united to each other by their filaments, so as to form showy, petal-like, fringed expansions; and in Eudesmia the petals themselves are united into a cap, thrown off upon the expansion of the flower.

Pallium pomiferum. 1, a flower; 2, a single; 3, a section of the ovary.
The Pomegranate-tree is a most anomalous form of Myrtus, note, remarkable for an almost total absence of transparent petals, and consequently of aromatic qualities, and having a fruit consisting of two whorls of carplets, compacted together. The fruit is richly veined by the thorough impregnation of the petals altered and disstoned so much after the flower has fallen off, that the fruit is nothing but a collection of cavities filled with seeds, and having no apparent relation to each other.

MYRTEA. Dr. Turton's name for a genus of conifers found in the cold regions of the world.

MYRTILE, the Myrtus communis of botanists, is a bush with evergreen opposite leaves, which, when seen by transmuted light, appear as if pierced with small holes, in consequence of the very numerous stamens containing a great number of little reservoirs of a transparent amorphic oil; the flowers are white, and produced in axillary clusters; they have an inferior ovary, numerous stamens growing from an epigynous disk, a single style, five petals, and are followed by a small oblong subglobose berry of purple from the calyx.

The Myrtle is apparently wild along the south coast of France, and in Sicily it occupies large tracts of country; but it does not appear to be really a European plant, but a native of Persia. In this country the Myrtle is seldom able to bear the winter, except when protected by the sea wall, and protected from severe weather. In the Isle of Wight, some stations along the south coast of England, and in many of the mild parts of Ireland, it however becomes an ornamental bush, without requiring any protection whatever.

For more details, see Loudon's 'Arboriculture Britannicum,' vol. ii, p. 962.

MYRTUS PIMENTO. [PIMENTO.]

MYSCA, Dr. Turton's name for a genus consisting of evergreen shrubs and small trees, indigenous of Pictorium.

MYSIA, the name of an antient division of Asia Minor, forming the north-west extremity of that peninsula, and bounded on the north by the Propontis, on the west by the Hellespont and the Ægean Sea, on the south by Lydia, from which, by the mouth of the Bosphorus, it is separated by the valley of the Caicus from that of the Hermus, and on the east by the river Rhynacdes, which divided it from Bithynia. On the south-east the high land forming the interior of Mysia joins the central table-land of Propontis by a mountain range running parallel with the coast from Izmir through Pergamus to Nicaea. The boundaries of Mysia, Bithynia, and Phrygia appear not to have been very clearly defined. (Strabo, b. xii.) Herodotus (vii. 74, 75) says that the Mysians were a Lydian colony; yet he adds, that the Bithynians affirmed that their ancestors had been derived from the Phrygians of the country of the Strymon by the Teuricians and the Mysians. Strabo (vii. p. 295, Casaub.) says that the Mysis (Mysantes) and Geea, who lived on the banks of the Ister, were considered by the old Greek writers to be Thracians, and that the Thracians of Asia, who dwelt between Pergamus, Phrygia, Lydia, and Troas, were a colony of the Mysians of Thrace. [MYSSA:] And in b. xii. he says that the Mysians of Asia were considered to be Lydians by the Thracians, and Thracians by others. This may mean that Thracian immigrainations became mixed with the previous inhabitants of Lydian race. Repeated Thracian immigrations are mentioned as having taken place before and after the Trojan war. Then came the Aolians, who occupied the maritime coast from the Hermus to the Ægæus, and afterwards the Hellespont, and the Ægean Sea, dividing both the Ægæus and Ægadhe they distinguished Æolus and Troas from Mysia. 

MYSSA, the name by which the Romans called the district of this country. The country was divided into several districts, each governed by a soubahdar.

MYSORE, a large province in the southern part of the peninsula of India, lying between 11° 40′ and 15° N. lat., and between 75° and 76° 30′ E. long. Its greatest length from south-east to north-west is 210 miles, and its average breadth about 140 miles. The province is bounded on the east by the Eastern Ghauts, on the south by Coimbatore and Salem, on the west by the Western Ghauts, and on the north by the Saurashtra country, which is connected with the province of Cambay, and formerly ceded to the English by the rajah of Mysore. The province consists of elevated table-land, with many lofty hills, some of which rise several of the rivers that traverse the low country; the chief of these rivers are the Caveri, the Tamar, the Madura, the Vaalavart, the Kaveri, the Palkon, the Kallen, and the Palar or Palaur. The level of the province varies from 1830 to 2800 feet above the sea. Sevayunga, the highest mountain in Mysore, is in 13° 10′ N. lat., 77° 20′ E. long., is 4600 feet high. Owing to the great elevation of the country, the climate is temperate and healthy. The clouds are much broken by the Ghauts which bound this territory to the east and west, and although there are frequent heavy showers in the table-land of Mysore, they are seldom of long continuance.

Mysore is governed by a native prince or rajah, with whom the English have a subsidiary treaty, concluded in 1799, after the defeat and death of Tippoo. On this occasion Coimbatore, Canara, and Soomla was transferred to the British government. The territories of the Mysore rajah is divided into three districts or subayenas, viz. Patana or Seringapatam, Nagara or Bednore, and Chacalual. The first-named of these districts is by far the largest, and comprises ninety-one subdivisions; Nagara is next in extent, and Chacalual is, to the number of these subdivisions is superintended by a soubahdar. The situation of the natives who are of the superior class is upon the whole much better in Mysore than it is in the rest of India; but the natives, both civil and military, rest with them, instead of being vassals of Europeans. In the Company's territories the natives, whatever be their station, with few exceptions, have a master in every European, while in Mysore the governing class owns only one master, but the great number of people are, on the contrary, by no means so well off as in the British territory, the Mysore government being most oppressive to them. The province is, upon the whole, thinly inhabited. In 1804, the latest time as to which we have any information, it is stated that its population was 492,612, and of individuals 2,171,754. Several times during the latter half of the eighteenth century the country was overrun by hostile armies, and ravaged to such a degree that many districts, which had previously been well peopled and cultivated, were wholly deserted. During the last years of Tippoo's reign the inhabitants of Mysore had been subjected to a great degree of security, and several good roads have been opened. The dwelings of the peasants, although built of mud, are more neat and commodious than in most parts of India. The population is supposed to have increased since 1804 under the improved state of things.

The rajahs of Mysore were for many years actively opposed to the extension of the British power in India. Hyder Ali Khan, who began his military career in 1749, and who assumed the sovereign power in 1760, invaded the lower Carnatic in 1780, and desolated the country to the very gates of Madras. His further progress was arrested by Sir Eyre Coote, but, being assisted by the French, he was able to continue the war until December, 1782, when he died, and was succeeded by his son Tippoo, who continued the war until the beginning of 1784. Peace being then concluded between France and England, he lost the assistance of his European allies, and was forced to conclude a treaty with the English. In 1790 Tippoo attacked the rajah of Travancore, whom the English were by treaty bound to assist, and a war ensued, which lasted until March, 1792, when a peace was concluded by Lord Cornwallis under the walls of Seringapatam, in which Tippoo was defeated, and the greater part of his dominions. With the hope of recovering this territory, he endeavoured in 1798 to excite disaffection among the native subjects of the British, and sought the assistance of the French republic and the soubahdar of Cambay.

In February of the following year the British army entered Mysore, and in April laid siege to Seringapatam, which fortress was taken by storm on the 4th of May.

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when Tippoo was killed. Upon this event the English government placed on the throne the Maha Rajah Krishna Udaiyer, then a child only six years old, a linear descendant of the ancient rajas of Mysore, but whose dynasty had been dispossessed by Nether Ali. Purniah, who had been one of Tippoo's ministers, was at the same time entrusted with the government, and a treaty was concluded whereby the Eng- lish undertook to maintain a military force for the defence of Mysore against all invaders, for which service an annual payment of 750,000 rupees was to be made to the Company's government of seven years of pagodas (280,000l.). This treaty has continued in operation to the present time. The Rajah Krishna Udaiyer, having been brought up under European guardianship, usually goes about with much of the ceremony that is commonly observed at the courts of the native princes of India, but on state occasions he goes abroad with much pomp in a carriage capable of holding thirty persons, and drawn by elephants.

In 1760, therefore, the ancient capital of the province, which was about 1770 superseded in this respect by Seringapatam, but it again became the seat of government on the fall of that fortress in 1799. It is situated in 12° 19' N. lat. and 76° 42' E. long. It occupies a considerable space of ground, and is bounded on the south by a wall four ells thick, with some regard to regularity, and the houses, which are for the most part whitened, are intermingled with temples and trees. The fort is separated from the petath, or town, by an esplanade, and besides the royal palace, contains the dwellings of the principal merchants and bankers.

MYSTERY (μυστήριον). In the religion of the Greeks there were rites and doctrines which were kept secret from the mass of the people and only communicated to a chosen few. These things were called mysteries. This word has been borrowed from the writers of the New Testament, who apply it to things which are kept secret for a time and afterwards revealed, or to things which are kept secret from some persons though they may be revealed to others, or lastly, to things which, though not perfectly secret, are not known by all.

Thus the word answers pretty well to the English word secret. It is frequently opposed to words which imply discovery. Thus the New Testament writers speak of a mystery revealed (μυστήριον ἀποκάλυμμα), or brought to light (Ψευδόμα) or an unknown (μυστήριον). They call the gospel a mystery, as being a system which had formerly been kept secret, but was now revealed to them, and through them to the world (Rom. xvi. 25, 26; 1 Cor. ii. 7-10; Ephes. iii. 19; Coloss. ii. 2, 27; ii. 2; iv. 1). So Christ said to his disciples mysteries to that is, the mysteries of the kingdom of heaven, but to them it is not given (Matt. xxi. 11; Mark. iv. 11; Luke, viii. 10), that is, you are permitted to understand those doctrines which are at present kept secret from others. But these mysteries were communicated to mankind by means of the secrets to the world (Matt. xvi. 20, 26; xxvii. 19, 20; Mark, iv. 22; xvi. 15; 1 Cor. iv. 1). It is also applied to individual facts or doctrines. Thus the admission of the Gentiles to the privileges of the Christian religion is called a mystery, because it had never, before been understood by the Jews applied the word to solemn religious rites, and this is probably the reason why μυστήριον is translated in the Vulgate by sacramentum. In modern usage a mystery is a doctrine which is incomprehensible to the human understanding, or which appears to resolve facts by the method of all contrarieties; for if such contradiction be proved, the doctrine is no longer mysterious but impossible. We believe that they can be explained, though our mental powers are not strong enough to explain them. It is worthy of remark that the word Secret, from the same root, is used in the philosophy and natural religion as well as in revealed religion.

(Campbell On the Gospels.—Dissemination of the Word.)

MYSTERIES, or MIRACLE-PLAYS. [English Drama, p. 326.]

MYSTICS, a Christian sect which arose in the second century, and whose principles are probably to be traced to the philosophy of the Christian Platonists of Alexandria. Ammonius Saccas and his followers. They first appealed to the mysteries of Egypt, and afterwards to the doctrines of a Grecian fanatic, who gave himself out to be Dionysus the Areopagite, one of St. Paul's converts (Acts, xvii. 31) and who is generally regarded as the founder of the sect that was afterwards called the Quietists.

Adopting the Platonic doctrine, that the human soul is a portion of the divine nature, they held that every man has a divine light within him which is sufficient for his guidance to present and future happiness, but that this light is obscured by the grossness of our material body, and the influence of external objects. To shake off these evils, and, thus to keep the soul in close connection as possible with its divine original, they considered to be the essence of religion; and this they endeavoured to maintain by a secret communion with God, and an austere discipline of the body. As they considered everything exterior to the soul as only calculated to obscure the divine light within them, they set no value upon accurate systems of doctrine nor upon the religious services of the church. One of their leading doctrines was that regard to God must necessarily be disinterested, that it is unimportant to the expectation of reward or punishment.

The austere lives and apparent devotion of the Mystics caused them to be adopted by a fanatical sect, Michael Molinos, from whose representations of religion, as consisting in the perfect tranquillity of a mind always engaged in a communion with God, the sect obtained the name of Molinists. At the end of the same century we are called to the Mysteriois in France by the writings of Madame Guyon, whose sentiments were opposed by Bossuet, who defended the church.

(Moyle's Ecclesiastical History, and the works quoted.)

MYTHOLOGY (μύθος-λογία). The mythology of a people may be said to consist of those legends and traditions which have been, at some period or other, usually believed by a majority of the nation, but which cannot be regarded as historical truths or principles of sound criticism. It is therefore not confined to the literature of any particular nation; it includes everything that has been the object of popular belief, not merely respecting the attributes, and adventures of the gods, but also concerning the early heroes, mortal or divine, of any nation. The historical inquirer has frequently great difficulty in deciding
meaning at what time the mythology of a nation may be said to cease, and its history to begin; and in fact it is impossible to determine the exact time, since the transition from mythology to history must be necessarily gradual; and many traditions, which appear at first sight entirely mythological, may, upon further examination, be proved to contain some great historical truths. The scepticism which calls upon us to reject as mythological everything in the early history of a people which appears to us extraordinary and wonderful, is as little worthy of respect as the credulity which requires us to believe everything that has been recorded respecting the exploits and adventures of the early heroes of antiquity.

Though a mythological event may be fictitious, it appears that myths often differ from fiction or fable, in having less generally believedock; who had been born respecting the exploits and adventures of the early heroes of antiquity.

On few subjects perhaps has more learning been thrown away, than in investigating the history and origin of the mythology of the principal nations of antiquity. Among the kings that performed many of the exploits and adventures of the early heroes of antiquity, though the god-sense preserved him to a great extent from the follies which distinguish Bryant's work. Most of the Christian fathers maintained that the principal deities in the ancient mythology were allegorical, and allegories in his exposition of the mythology of the Brains as the mythology of the Christian religion.

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ventively will discover that they are to posterity as matter already received and believed, not then for the first time imagined and offered to mankind. And this it is which has given us the light of the poets themselves, as being neither discovered by the poets themselves, nor belonging to their age, but a kind of sacred relics, the light airs of better ages, which, passing through the traditions of earlier nations, have been breathed upon the trumpets and drums of these Greeks.

This view of mythology has been adopted and carried out to a great extent by Creuzer, in his 'Symbolik und Mythologie der alten Völker, besonders der Griechen.'

4. The Physical theory; according to which the elements air, fire, water, and earth were originally the objects of religious adoration, and the principal deities were personifications of the powers of nature. Thus the ancient mythology of the Hindus, as developed in the Vedas, personifies the elements and the planets, and differs essentially from the hero worship of later times. The transition from a personification of the elements to the notion of a supernatural being presiding over and governing the different objects of nature was easy and natural; and thus we find in the Greek and Italian mythology that the deities presiding over the sun, the moon, the sea, &c., and not the objects themselves, are the subjects of religious adoration. The Greeks, whose imagination was lively, peoples all nature with invisible beings, and supposed that every object in nature, from the sun, sea to the smallest fountain and rivulet, was attended by some particular divinity. Wordsworth, in his 'Excursion,' has beautifully developed this view of Greek mythology.

'That fine calm eve, the lovely Henflam, stretched
The sun through half a summer's day,
With music bided his indolent repose;
And, in some fit of weariness, if was.
When his own breath was silent, glanced to hear
A distant strain, far sweeter than the wind.
When his poor skill could make, a fairy fished
Even from the dazed chariot of the Sun
A careless youth, in golden loke,
And filled the illumined grove with ravishment.
Two mighty Hunters, lifting up his eyes
Towards the crescent Moon, with grateful heart
 Called on the lovely Wanderer who beheld
That timely light to share his jovian sport:
And hence a beaming Goddess with her nymphs
Arrested the rays, and through the starry groove
(Not accompanied with love's false notes
By echo multiplied from rock or tree.)
Swift as the storm in chase, as soon and stars
Glance rapidly along the clouded heaven.
When winds are blowing strong. The Traveller asked
His thirst from still or rushing font, and thanked
The Rose, that shed her blood in streams.
Gilding space, with shadows in their train.
Mind, that with small help from fancy, be transform'd
Into fret Greats sporting视力.

The white morning, as they passed, their wings
Locked not for love fair objects whom they wood
With arms, nor mounted on the top of their peak,
Stripped of their leaves and twigs by hearty saw.
From depth of shaggy covert peeping forth
In the low vale, or on steep mountain-side
Are sometimes intermixed with stirring horses
Of the field, or village, if you're the depending
These were the lurking Satyrs, a wild brood
Of obscene desires, or else himself,
The simple shepherd's awe inspiring god.'

Almost all the theories that have been brought forward, either in ancient or modern times, to account for the origin of mythology, may be classed under one of these four divisions; but not one of them taken by itself is sufficient to account for all the mythological traditions of a nation. The error of most writers on mythology consists in referring the origin of all myths to one common source; whereas the mythology of all nations has been formed from various and distinct sources. All the theories which have been mentioned above are true to a certain extent. Even that mode of interpretation which we have ventured to call the Scriptural theory, perhaps the most unsound and unsatisfactory of all, will serve to throw light upon some myths which would otherwise be unaccountable. For instance, the legends which we find in the mythology of almost every people, respecting a period in which the world was covered with water, can hardly be explained upon any other hypothesis than that which was used to account for the Flood in the Biblical books. It would therefore be more correct to say that the mythology of a nation has arisen from all the causes which have been mentioned, rather than from any one in particular; but in most cases it will be recollected that there are many myths the origin of which cannot be accounted for on any of the hypotheses that have been proposed. A great number of legends in all countries have arisen from the desire of men to account for those natural phenomena which he cannot understand; and not a few have had their rise from a similar desire of giving a reason for the names of places and persons. The 'Metamorphoses' of Ovid will supply numerous examples of such myths. 

The preceding observations are only intended to give a general view of mythology, and of the principal systems which have been proposed in ancient and modern times to account for the phenomena. The information must be acquired by aid of the articles in other parts of this work, such as BRAMHA, VISHNU, FAIRIES, HEROGENI, JUPITER, JUNO, APOLLO, ARIS, MARS, BELLONA, &c, and more particularly by the help of such works of art as Topography, Mythology, &c.

(Scorpius Rem Remorum, edited by Der.)

The Phleg or Canaan; Rudbeck's Atlantica; Barbeau; On the Wisdom of the Antients; Banier's Mythology and Fables explained by History; Bryant's Analysis of Ancient Myth; Jones; W. Jones; On the names of Mynor and India; Moor's Hindu Pantheon; Cramer's Mythology of the Hindus; Rhode, Uber Religion Bildung, Mythologie, and Philosophie der Hindus; Creuzer's Symbolik and Mythologie der alten Völker, besonders der Griechen; K. O. Müller's Prolegomena zu einer Geschichte der Mythologie; Buttman's Mythology, oder Abhandlungen und Ansätze über die Sagen der Griechen, Römer, und Hethit; Loback's Aglaophamus, sive de Theologie Mythologico, der deutschen Mythologie. The English reader may refer to Keightley's Mythology of Antient Greece and Italy.
Amercardia he considers as differing but little from Cardia, and he observes that both the one and the other are to be considered as modification in general form and the direction of the ribs (coëtes). He states his suspicions that this is the place for Cyrtactella.

This family is placed by Cuvier between the Ostraca and the Conchifera. The genus Pinna is placed by this zoologist between Articula and Area.

Lamarck characterised his Mytilactae as having the hinge with a sub-internal, marginal, linear, very entire ligament occupying a great part of the anterior and posterior border, and the shell rarely foliated. In this family he places the genera Modiola, Mytilus, and Pinna.

M. Deshayes, in the last edition of Lamarck's work, states that nearly all conchologists have admitted the family of Mytilactae like the Mytilidae, either as it was constitut-ed by Lamarck, or after having made it undergo some modifications of little importance. M. Deshayes remarks that he himself adopted it in the ‘Encyclopédie,’ having suppressed the genus Modiola, which, in his opinion, has not sufficent characters to admit of its place by Articula. But, setting aside all former opinion, M. Deshayes, in the last edition of Lamarck, enters into an examination whether the family ought to be preserved. The genus Mytilus, he observes, has always two adductor muscles, the anterior one venter, and the posterior one venter, being placed terminal; in both cases the mantle are united posteriorly at a single point, so that there exists but a solitary siphon for the anus. The aperture of the mouth is not papillous. The Modiolus, however, differs from nothing in the Mytilus; their anterior extremity, as is indeed in some species rather larger, and the external extremity of the animal is a little prolonged beyond the umbones. These differences are, in his opinion, without importance, for we pass from one genus to the other by insensible gradations. As for the position of the periostracum, is, in no way, and find the mantle with a posterior commissure; consequently there is no anal siphon; there are two unequal muscles, and the mouth as well as the lips are covered internally with membranous papillae. The ligament of the Mytilus is exfoliated and fibroso-sinuoso. With regard to the slits of the Commissurae, that of the Pinna is very narrow, elongated over nearly the whole of the posterior border, and often covered with a delicate testaceous lamina, losing nearly all the characters of external ligaments. The Articulæ have no anterior adductor muscles, but, like the Pinnae, their mantles have no posterior commissure; the mouth is furnished with papillae; the ligament has none of the characters of external ligaments, but is sunk in a superficial gutter, and takes all the characters of the ligaments of the Ostracacea and other families. M. D. remarks, that no one who has observed with due attention both the Anterior and the Articulæ would there seem to be more analogy than between the Pinnae and Pinnae. Nevertheless, in this last genus there are two adductor muscles, whilst in the Articulæ there is but one. Thus we ought to remember that the character resting upon the number of the muscles is very important, and if we here apply that character, we shall be led to make the Articulæ a small family separate from the Pinnae.

M. de Blainville thus characterizes the Mytilactae, which he places between the Ostracacea and the Margaritacea or Polydonida. The genus Articula among the Margaritacea thus immediately precedes the Mytilactae.

Character.—Mante adhering towards the borders, slit throughout its inferior border, with a distinct orifice for the anus; the branchial orifice by the more considerable thickening of its posterior border; a calculi-cated, ligamentum, foot, with a byssus backwards at its base; two adductor muscles, the anterior of which is very small, bearing each of the siphons.

Shell regular, equivalent, often furnished with an epidermis or corneous, with a toothless hinge, and a linear, dorsal ligament.

The genera placed in this family by M. de Blainville are Mytilus, with its subdivisions, and Pinna.

M. Rang gives the following as the characters of the family Mytilactae:—

Animal having the mantle open throughout its inferior part, and adhering towards the borders; a separate aperture behind for the excrements, forming very rarely a tube; the foot linguisform, calcareated, and furnished with a byssus behind.

Shell rather delicate, generally with an epidermis, or cone-nous, equivoque, but very inequilateral; the hinge toothless; the ligament linear; anterior muscular impression very small; the posterior one rather large.

Marine (the genus Mytilus alone presents a species which is said to live in fresh water). (Manuel, &c.)

The genera arranged by M. Rang under this family are, Mytilus, with its subdivisions, including Modiola, Lymno-
toma, &c., and Anodon.

Mr. G. B. Sowerby (Genera), after remarking that the Linnean genus Mytilus, on account of its principal character being its want of hinge teeth, consists of several forms that are widely distinct from each other, and which have well served as the basis of several Lamarckian genuses, such as Articula, Modiola, Anodon, and others, in connection with the present genus, which deservesly retains the name of Mytilus, both on account of its form and the priority of its claim, proceeds to observe that the other genera which have been united with it appear, which it appears necessary to distinguish it, because of a certain degree of general resemblance, are Modiola and Lymnomus: from Anodon and Articula, together with Lamark's Metagrauntis, it is, he adds, obviously distinct; whilst one character, namely, the position of the adductors, serves to distinguish it from Modiola and Lymnomus.

Mr. Garnier, in his paper 'On the Anatomy of the Lamel-libranchiate Conchifera' (Zool. Trans., vol. ii.), is disposed to regard the disposition and form of the branche and muscles as being as useful in the use of the Lymnomus as of the animal; and he instances Anomia, Pecten, Arcus, Modiola, Unio, &c., &c., as each having a particular disposition of the branche, sac of the mantle, valves, siphon, &c., giving rise to particular modifications of the course of the irrigating currents of water to the branche. He observes that in the genera, some of which are above mentioned, no complete division of the sac of the mantle exists, while in Solen Hiatella, Pholas, &c., a different disposition takes place. It appears that all the Margaritacean system, in the observant distinct from the sac in Modiola, Mytilus, Lymno-
toma, &c., whilst in Tellina, Cardium, Macrura, Pholas, Mya, and most others, the orae are discharged into the excretory organs. With reference to the Reproductive system, M. Rang remarks that the genera of the Lamellibranchiate Conchifera differ much in their situation: sometimes they form distinct parts, sometimes they are found in the foot, sometimes they are ramified in the mantle, which last disposition is present in Modiola, Anomia, Lymnomus, Hiatella, and the like. The common division of the lamellibranchiate Conchifera differs much in their situation: sometimes they form distinct parts, sometimes they are found in the foot, sometimes they are ramified in the mantle, which last disposition is present in Modiola, Anomia, Lymnomus, Hiatella, and the like.

The same author in his 'Anatomical Classification of the Lamellibranchiata' (loc. cit.), thus arranges the genera Mytilus, Modiola, Pinna, Lymnomus, and Unio.

Mr. de Blainville in the Linnean Society's Transactions, vol. xxvi., has given a very interesting account of the affinities of the Mytilus and Modiola, and has pointed out several peculiarities which indicate a close affinity between these genera.
form an anal siphon; mouth rather large, furnished with two pairs of soft palps, which are pointed and fixed by their summit only. Foot slender, cylindrical, carrying at its base, and posteriorly to it, a silky byssus; abdominal mass moderate, and on each side a pair of branchial nearly equal; two adductor muscles, the one anterior and very small, the other posterior, large, and rounded.

The common edible muscle is found in extensive beds below low-water mark, and also at a greater depth. Rocks and stones between high-water and low-water marks are also covered with them. We once saw a lobster, which is now, we believe, in one of our aquariums, with its shell coated with them. The species is used largely as an article of food, and is considered rich and sapid by many; but it entirely disagrees with some constitutions, and, besides other derangements, has been known to cause blisters, swellings, &c. Some cases are recorded where such other affections have been produced by eating these muscles, whilst some who have partaken from the same dish have escaped all evil consequences. These derangements have been attributed by some to the byssus, by others to the Pea-crab (Pinnotheres), a little crustacean which shelters itself, especially at particular seasons, in the shell of the Muscle, and by others again to the muscle itself being in an unwholesome state or out of season. There can be little doubt that the muscle, like the oyster, and indeed like most other edible animals, is comparatively unfit for the food of man at certain periods; but that the Pea-crab has anything to do with the poisonous qualities of these esculents is denied by all who have written on the subject. When any symptoms of derangement occur after eating muscles, an emetic should be taken and afterwards a dose of castor-oil. Cases of this kind are however rare. Pennant remarks, that for one who is affected by eating muscles, a hundred remain uninjured. [See further, Mytilus Edulis.]

**Gland of the byssus, mantle, ovicord, &c. of Mytilus edulis (Germ.)**

A. right lobe of the mantle; D. rectum; G. branchial; H. foot; J. posterior muscle; M. superior tube; N, heart; P. ventricle; Q. muscle; R. pericardium; S. tentacles; T. byssus; U. gland of the byssus; V. retractile muscle of the foot; W. valves of the mantle; X. ovicord; Y. ovary of the excurrent organ; Z. internal lute.

The species are numerous, and most of them are used as food; but they should be eaten with caution, for serious illness and even death have ensued from a meal made on some of them. The byssus or beard, as it is popularly called, should be particularly cleared away, and they should be particularly avoided when cholera is about, or even when diarrhoea is prevalent.

Captain King, R.N. (Voyages of the Adventure and Beagle, vol. 1), mentions the Choro (Mytilus Choris of Molina) as among those shell-fish of the island of Chiloe which are particularly deserving of notice. Speaking of this large muscle, Captain King says, Molina has described the choro of Concepcion, which is not at all different from that of Chiloe. It is often found seven or eight inches long. The fish is as large as a goose's egg, and of a very rich flavour; there are two kinds, one of a dark brown, and the other of a yellow colour; but the last is most esteemed. There is also another sort, much larger than the chor, yet equally delicate and good, the fish of which is as large as a swan's egg: it is called cholguas; but as the shells seem to be of the same species, I think the distinction can only be owing to size. In Febres' "Dictionary of the Chilean language," the word chochuela is rendered into Spanish by "casca de choros blancas," or shell of the white muscle. Cholhuas, or Cholguas (the letters g and h are indiscriminately used), must be a corruption; for it is now used in Chiloe to distinguish the large from the small choros. The manner in which the natives of these islands, both Indians and descendants of foreigners, cook shell-fish is very similar to that used for baking in the South Sea Islands and on some parts of the coast of New Holland. A hole is dug in the ground, in which large smooth stones are laid, and upon them a fire is kindled. When they are sufficiently heated, the ashes are cleared away, and shell fish are heaped upon the stones, and covered first with leaves or straw, and then with earth. The fish thus baked are exceedingly tender and good; and this mode of cooking them is very superior to any other, as they retain, within the shell, all their own juices.

**Geographical Distribution. — Very wide.** Few rocky coasts are without some of the species, which are all littoral. They are sometimes found fixed to crustaceans, shells, corals, and others with a smooth shell.

**Example, Mytilus edulis — Common Salt-water Muscle.**

This species is too well known to require description: the figures will show the shape of the shell, which is strong: when freed from the epidermis and polished, the under surface of the external part of the shell is exposed, and is of a deep blue. In this state it is often offered for sale at watering places. The inside of the valves is white with a dark rim.

Mytilus edulis.
that drove in upon the coast. These horrors were overcome by the distresses of our people, who were even glad of the occasion of killing the gallinazo (the carrion crow of that country) while preying on these carcasses, in order to make a meal of them.*

Here may be introduced the *Mytilus polymorphus* of Pallas, Gmelin, and others, thus characterised as a genus by Dr. Vanbeneden, under the name of *Dressina.*

**Animal.**—Mantle entirely shut, presenting three apertures, one of which is furnished with a siphon. Anterior extremity of the body bifurcated and lodging in the middle of the division the transverse anterior muscle. Abdomen depressed; extremities of the branchium floating in their posterior half.

**Shell.**—Regular, equivelar, inequilateral, umbilicus with a septum in its interior. Three muscular impressions, the middle one unique and linear.

**Nervous System.**—This consists of two pairs of gill-lobes and a great single ganglion; they are all united together, and represent a true chaplet (chapelet). The first pair of nerves, that which represents the brain, is situated on the lateral parts of the buccal opening between the two labial tentacles, but more approximated to the anterior tentacle. It cannot be said that it is placed above the oesophagus, for it is, if anything, below it. The skin, which forms the upper wall of the oesophagus, covers it, and it is placed between this skin and the anterior retractor muscle. The second or mesial pair is situated at the anterior part of the base of the retractor muscle, between it and the liver. The third pair is represented by a single ganglion, which occupies the mesial line, and of which the volume is considerable. It is situated in the middle of the posterior transverse muscle.

**The muscular system** is much the same as in *Mytilus.*

Dr. Vanbeneden thinks that the organ of the byssus, which he designates, after Poli, by the name of 'languette,' has been erroneously taken for the foot. The true foot, he observes, consists of a muscular tunic more or less thick, which covers the abdomen of the animal, and serves it as an organ of progression; whilst the organ, which always accompanies the byssus, possesses no character in common with the foot except its mobility. Instead of covering the abdomen as a muscular tunic, it forms a part of the retractor muscle, from which it cannot be separated. At the base of this organ, with which, when the byssus is torn away, the animal seems to explore the bodies in its neighbourhood, is the sheath in which the byssus is lodged.

The mantle entirely envelops the animal, and forms three apertures, one of which serves for the passage of the byssus and the 'languette;' the second terminates the animal in the siphon; the third is placed on the back, and gives passage to the excreta. The aperture of the siphon is elongated many lines in respiration, and can be bent in different directions.

**Place in the Animal Series.**—Dr. Vanbeneden comes to the conclusion, from the anatomical and physiological

* Named from M. Deviser of Mavryk (province of Limburg).
structure of the animal, that its place is between Mytilus and Anodrom.

Geographical Distribution.—The author above quoted states that this form is found throughout Europe, and that America possesses individuals which approach it. (Mytilus nucorum, Rafinesque, &c.)

Dr. Van Beneden records two recent species, Dreissena polymorpha and Dreissena africana.

Example, Dreissena polymorpha. This appears to be the Mytilus Wulige, Cuma; M. Chemnitz, Frc.; M. Hagenii, De Boer; M. lineatus, Waardens, and M. Arc, Kicks.

Localities.—Inhabiting seas, lakes, rivers, and marshes; all these conditions seem favourable to it. Dr. Van Beneden gives the following localities:—the Caspian Sea, the Black Sea, and the Baltic, the Danube, the Wolga, and the Rhine, where they are found in considerable quantities; the marshes of Syria (the Palatinate), the Canal Guillaume (Belgium), the lakes of Harlem (Holland), the Lea (our Lea, we suppose, is meant), the Dokes (the Commercial Docks, London, probably), and the neighbourhood of Edinburgh (Union Canal); so that this form extends nearly over the whole surface of Europe from lat. 43° N. to 56°; Turkey, Austria, Russia, Germany, Belgium, Holland, and England. (Van Beneden.)

Mr. J. D. C. Sowerby appears to have been the first who noticed their introduction into the Commercial Docks, in the Thames, to which place he is of opinion that they had been probably brought in timber.

Habits.—The species are found at the bottom of the water in beds, like the marine mytili, agglutinated in bunches by means of their byssus. They attach themselves to stones, to piles, to other shells (Unio and Anodrom), and all the bodies which are in their neighbourhood. Dr. Van Beneden remarks, in continuation, that they probably often adhere to the keels of boats, and that it is perhaps by such means that they are dispersed over such a considerable extent.

M. Deshayes states that he knows a number of species, Mytilus blepharisc, for example, offer the same character, which loses its importance when we find it established by degrees, commencing in some species so as to be scarcely perceptible, increasing in others, and showing itself in its greatest development in the species last quoted. Unfortunately, he adds, the character is not known; so that we are unable to appreciate the value of the character which it offers in common with the genus Dreissena of Dr. Van Beneden.

Modiola. (Lamarck.)

M. Rang makes Modiola the third group of the genus Mytilus. M. Deshayes, in his inquiry whether this genus ought to be preserved, observes that the Mytilus and Modiolae must resemble each other, as they all admit, but that the difference, the importance of which he proceeds to test. Of the animals he says nothing, their analogy being so perfect, and all their characters, internal as well as external, being so similar that it is impossible to distinguish them. The habit in which the species live in the stone, which they pierce has not changed their organization; and of the justice of this remark those interested in the subject may, he states, assure themselves by a comparison of the animals themselves, which are abundantly spread abroad in all seas. It is a received principle among all zoologists, he continues, that animals having the same organization ought to make a part of the same genus; but as there are persons who attach considerable importance to certain characters in the shells, it is right to reduce it to its just value. The Modiola differ from the Mytilus in not having pointed and terminal umbones. On assembling a great number of living and fossil species of both genera, some will be observed whose umbones, nearly terminal, are overpassed by a small very short border; others in which this border is a little more extended: and so one passes by insensible degrees from the Mytilus to the Modiola without the possibility of determining the point where one genus ends and the other begins. If the same comparison is continued between the Modiola and the Lithodes, it is at length answered, and then, concludes M. Deshayes, the observer will be convinced, as we are, of the inutility of those genera.

Mr. G. B. Sowerby, in whose Genera, No. xxvi., will be found very instructive figures showing the variety of form to which the Modiola is treated by him as a distinct genus. He subject, admits that the most important character which serves to distinguish Modiola from Mytilus consists in the smaller side of the former advancing before the umbones, and giving the shell a rounded termination anteriorly. In every other respect he admits that it resembles Mytilus, to which it was united in most of the older books, in connection with other genera that are exceedingly distinct. "The Modiola, like the Mytili," says Mr. Sowerby, in continuation, "and many other genera, affix themselves to submarine productions by means of a bundle of rather coarse fibres, commonly called a byssus, each fibre of which
when caused as for age. but a in b, as Holland whitish dages; are selves situated JicMao, author of «. Some affixed to the by its expanded external termination, and applied by the foot of the animal. The recent species of Modiola are not very numerous; we have however several species on the coasts of Britain, of which the most remarkable are the M. discrepans and discors. These two, together with some others that resemble them in form, differ much from the common Modiola, and might perhaps with propriety be considered as a distinct genus. The same author states his belief that Modiola discrepans and discors are, on our coasts, always found embedded in the common Ascidia, and appear to be destinative of a byssus; while the much larger specimens that are brought from the West Indies are found completely enveloped in a fine silky byssus closely matted together, and forming large bundles. Some cognate species however, that have been brought from the Northern Ocean, appear, he adds, to have been fastened by a few filaments only.

Mr. Garnier remarks (loc. cit.) that when a foot is present there are three ganglia, or pairs of ganglia; when absent, but two. Two are situated at the mouth, more or less removed from each other, but always connected by a supraregional nerve; they are sometimes on a level with or before the mouth, sometimes behind it. They give off on each side filaments to the anterior muscle, tentacles, lips, and anterior part of the mantle. Each ganglion likewise gives off a twig going to the anterior ganglia, which are situated between the branchiae on the posterior mantle. These are united into one, when the branchiae are themselves united medially, as in Macra, Mya, Solen, &c., but are at a distance from each other when the branchiae are remote; in this last case they are always connected by a transverse nerve, as in Modiola, Avicula, Lithodomus, Arcos, &c.

M. Rang separates the group of Mytilis, consisting of Lamark's genus Modiola, into two subdivisions.

Shell sulcate longitudinally.

Example, Modiola sulcata. Shell bluish white; epidermis yellowish; hinge-margin dentilated.

Locality.—Indian Seas. Lamark.

Modiola sulcata.

a. Shell closed, with byssus; b, outside view of valve; c, inside view of valve.

Shell not sulcate longitudinally.

Example, Modiola Siliacea (including, according to M. Deshayes, Modiola cinnamomea). Shell marone brown or whitish; epidermis deep marone brown.

Localities.—Lamark gives the seas of the Isle of France as the habitat of Modiola cinnamomea, and the seas of New Holland as that of Modiola Siliacea.

Modiola Siliacea.

Lithodomus. (Cuv.)

Animal oblong, very much elongated, thick, having the mantle prolonged and fringed posteriorly; anal aperture oval; mouth furnished with very small triangular appendages; foot lingualiform, canaliculated, but little developed, and carrying a byssus at its base in the early stages of the animal's life.

Shell delicate, covered with an epidermis, oblong, very much elongated, subeylindrical, rounded anteriorly, not gaping; umbo subanterior, very distinct; hinge toothless; spiralline for the most part internal, inserted in a narrow and elongated suture; anterior musural impression of considerable size.

Example, Lithodomus Dactylus (Modiola lithophaga, Lam.; Mytilus lithophagus, Linn.).

We have seen the opinion of M. Deshayes, as to the separation of this genus. M. Rang, on the other hand, thinks that this form has been separated from the Mytilis, by M. Cuvier, with more reason than Lamark had for the separation of the Modiola from that genus. The singular habits of the Lithodomus and the form of their shell justify perhaps, he thinks, this generic distinction, which moreover has generally been adopted since. In the early stages of life the Lithodomus suspend themselves to rocks and madrepores, by means of their byssus; but they soon pierce those bodies, in order to introduce themselves, and thus form cavities which they can never leave, in consequence of their increasing volume as they advance in age. The byssus then becomes useless, and is no longer manifested. These shells, says M. Rang, in continuation, are very common in the Mediterranean and in the Antilles, where they are found in stones and masses of madrepore, and sometimes, but much more rarely, in some thick shells.

This species is highly nutritious and well-flavoured. Imprint these shells, says M. Rang, in continuation, are very common in the Mediterranean and in the Antilles, where they are found in stones and masses of madrepore, but much more rarely, in some thick shells.

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With regard to the power of piercing rocks, stones, wood, &c., possessed by Lamellibranchiate animals, Mr. Garnier, in the paper above quoted, observes that such piercing cannot in every case take place by the mechanical action of the valves, and he instances those of Lithodomus as not at all adapted for such an action. He also denies the possibility of the perforation being caused by a solvent fluid secreted by the animal. The fact appears to be, says Mr. Garnier, that the phenomenon is caused by the vibratile action of the parts exciting constant currents of water against the substances, aided by its impetus when drawn in down the
of the animal, and in some cases perhaps by
the rasping of the valves.

Pinna. (Linnaeus.)

Animal elongated, rather thick, subtriangular; lobes of
the mantle united on the dorsal border, separated through-
out the rest of their extent, ordinarily ciliated on the
edges; foot slender, conic, vermiform, carrying at its base
a silky byssus; mouth between two lips foliaceous within,
very much elongated, and terminated by two pairs of short
palps; the two palps of one side soldered nearly throughout
their length; two adductor muscles; the anus terminating
behind the posterior one. (Deshayes.)

Shell fibrous, horny, rather delicate, fragile, compressed,
regular, equiva!ue, longitudinal, triangular, pointed ante-
riorly, rounded or truncated posteriorly; anterior umbo but
little distinct; hinge linear, striate, toothless; ligament
marginal, a great portion of it internal, very narrow and
compact, occupying more than the anterior half of the
dorsal border of the shell, in a narrow and elongated gutter;
ante!ior muscular impression very small and entirely in the
angle, posterior muscular impression very large. (Ranq.)

Poll has given beautiful figures of the animal, which he
calls Chimara, and most elaborate details of its anatomy;
and to his great work we refer the reader. There are no
projecting siphons, and the conic tongue-like foot is em-
ployed by the animal to fix itself by the byssus, which is
not scanty and coarse, like that of the Mytilus, but long,
fine, lustrous, and abundant; so that, though it takes no
die, it is employed in manufacture in Italy. [Byssus;
Conchifera, vol. vii., p. 432.) The Pinna approximate
more especially to the Mytilus, but the shell of the former,
with its straight umbones and its gaping opposite extremity,
strongly distinguishes them. There is a tendency in their
shell to divide itself into laminae, and thus it approaches
that of the Malacacea.

Example. Pinna Flabellum.

Pinna Flabellum.

a, Young, with spines, and the byssus, nat. size; b, full grown, inside view
of valve, one-fifth nat. size.

Habitat, Geographical Distribution, &c.—The species are
generally found in deep waters, but they have been taken at
depths ranging from the surface to 17 fathoms; most fre-
fenton on sandy bottoms, where they were moored by
their byssus, and at no great distance from the shore. It is
said that the animal sometimes fixes itself by the aid of its
byssus, and sometimes removes itself by the aid of its foot.
Small crustaceans, both brachyurus and macrurous, are
sometimes found in their shells. Species occur nearly a
all seas. Most of them are maculated when young with
vaulted or subtubular spines; but as they increase in age,
these are worn down, and at last almost entirely disappear.
We have had individuals of the great Mediterranean Pinna
before us, gradually increasing from a very small size to
nearly two feet in length. When specimens taken at wide
intervals were compared, the difference was so great that
they might easily have passed as distinct species; as indeed
they have been described by some authors. We have seen
many pearls from this Pinna not ill formed and of an amber
colour, but none of any considerable size.

Fossil Mytilide.

Mytilus.

Mr. G. B. Sowerby (Genera) states that the fossil specie
with which he is acquainted are not numerous; they occur
however, he observes, in some of the beds below the chalk
as well as in most of those above it, but particularly in the
crag.

M. Deshayes, in his Tables (1833), makes the number of
tertiary fossil species (tertiary) fifteen. M.Chemnitii and
Edulis he states to be both living and fossil (tertiary).
In the last edition of Lamarck (1836), he remarks that Brouci-
mentions a fossil shell to which the latter gives the name:
Mytilus edulis; but M. Deshayes does not believe that the
fossil is the analogue of Mytilus edulis, Linne, but of an
in Italy, that Dr. (diluvium) taking safe the species, MYTILUS one variety not Bognor be the this explain the the RoUiogd— others

Mr. G. B. Sowerby states that the fossil species are not many. He observes that such as he knows seem to belong primarily to the post-Pliocene period. There are others in the principal formations both above and below the chalk. M. Deshayes, in his Tables, makes the number of fossil species (tertiary) twenty-one; and Mod. karata discrepans and lithophaga (Lithodomus), both living and fossil (tertiary). In the last edition of Lamarck, the number given is twenty. The shell from Plaisance, considered by Lamarck to be a variety of Modiola subcinata, is not, in the opinion of M. Deshayes, a variety of that species, but very probably the analogue of Modiola karata; and he says that another Mod. lithophaga is not a Modiola, but a Gereilina. Dr. M. Deshayes notes Mod. elegans in the arenaceous limestone or sandstone of Bognor, and Modiolae equilis and bispina in the Shlankin sand. Professor Phillips enumerates the following species among the organic remains of the Yorkshire coast:—Modiola, scaprum (marlstone), plicata (inferior oolite), bispina (calc. grit), cuneata? (Oxford clay, Kellowsy rock and cornbrash), imbricata (Bath oolite), Hilla (laxa), unguicula (coralline oolite, Bath well); pulcher (Kellowsy rock), aspera? (inferior oolite), inclusa (coralline oolite). Mr. Lonsdale (Oolitic District of Bath) records Modiola Hilla (laxa), gibbosus (inferior oolite), Hilla? and plicata (fullers' earth), imbricata (cornbrash), bispina, aspera, etc. This is obviously incomplete, as the following list: Modiolae equilis, altaformis, aspera, bella, bippitaria, depressa, imbricata, lineata, parallelia, reversa, two new unnamed species, one (casts), and a doubtful species. These are principally from the lower green-sand. One (bella) occurs in the gault as well as in the green-sand, and bispina also in the Oxford oolite. The new and doubtful species appear to have been found in the Purbeck and Portland stone, lower green-sand, and Oxford oolite. Mr. Murchison (Silurian System) notes Mod. semisulcata (lower Ludlow rock) and inferior oolite (Wenlock slate). Lithodomus.

Lithodomus. M. Deshayes (Tables) does not mention this genus in his Tables, and appears to place it under Modiola, a position which it occupies in Lamarck's work. M. Deshayes records Modiola lithophaga (var.)—Lithodomus lithophaga—as fossil at Paris. Mr. Lonsdale (loc. cit.) notices a Lithodomus in the inferior oolite, and another in the coral rag. Dr. Fitton (loc. cit.) records a new species and another species, both nameless, in the Portland stone. Pinna.

Mr. G. B. Sowerby (Genera) states that he is acquainted with several fossil species, which occur in the secondary and tertiary deposits of marine origin; one, in particular, he observs, is beautifully preserved in the indurated sandy bed of London clay at Bognor; and another, he adds, is not infrequently met with in the calcareous grissier at Grignon. M. Deshayes gives the three as the number of fossil species (tertiary), and records P. nobilis as both living and fossil (tertiary). In the last edition of Lamarck, he notices the fibrous structure of the shell in this genus [SHELL], and says that in the tertiary beds the fibrous part decomposes into calcareous filaments, which detach themselves from the shell of the animal, leaving the portion which is more perfect. When this last part is a little gone (deagent), one of the junctions of the shell is formed is perceptible; and it is, he adds, to a similar disposition observed in an individual of the Pinna nobilis, or squamosa of Italy, that the animal species, Pinna quadrivalvis, is due. Pinna margaritacea (Paria, Grum., &c.), P. ampla (oolite in England, France, and Germany), and P. Sausurei (coral rag of St. Michiel, Mont Saléte, Normandy), are the other fossil species enumerated. Dr. M. Deshayes notes P. margaritacea in the arenaceous limestone or sandstone of Bognor, and another nameless, for which he cites Martin (Geol. Mem. West Sussex), from the Shlankin sand. Professor Phillips (loc. cit.) gives us P. gricata (Speeton clay), P. mitis (Oxford clay and Kellowsy rock), P. lancelata (cornbrash), P. cuneata (cornbrash and Bath oolite), and P. Fitton (lias). Mr. Lonsdale (loc. cit.) gives a species, nameless, from the inferior oolite, and another nameless, with a note of interrogation, from the Kellowsy rock. Dr. Fitton (loc. cit.) enumerates P. intestina, n. s., from the lower green-sand; P. tetragona, from the lower green-sand, Kent, Sussex, and Isle of Wight, and at Blackdown; and a cast and a species, new? from the lower green-sand (Sussex and Isle of Wight).
increased; the bowels sometimes obstinately constipated. Epileptic symptoms, or delirium, convulsions, and coma have appeared in the greater number of fatal cases, rather than inflammatory action. Powder such as sulphate of zine, which acts quickly, have been of service; but others seem the most effectual means of relieving the difficulty of breathing and the other nervous symptoms. Purgatives were found of no avail in some of the fatal cases accompanied by constipation; yet in general sulphate of magnesia (Epston salts) in a large quantity of fluid, acidulated with dilute sulphuric acid, taken in small and frequent doses, is very efficacious in removing the erosion of nettle-rash. (Combe, in Edin. Med. and Surg. Journal, vol. xix., and Christie On Poison, p. 46.)

MYX'INE, a remarkable fish belonging to the order Cyclostomi, family Petromyzidae, and genus Gastrobranchus according to Bloch. It is the Mixine glutinosa of Linnaeus, who, from its worm-like form, placed it in the class Vermes. The Mixine is usually about a foot in length, of a slender and nearly cylindrical form, compressed towards the tail; the dorsal fin is very narrow and continued round the end of the tail to the vent; on the head is a single scale which communicates with the interior; the head is rounded and destitute of eyes; eight cirri, or feelers, have their origin on each side of the tongue; there are two rows of strong pectinated teeth; the palate is furnished with a single hooked tooth: the branchial openings are two in number, and situated on the abdomen a little beyond one-fourth of the entire length. The remarkable fish frequents the northern seas, and occurs also on our own coast. It is found in the bodies of other fishes, especially the cod and haddock, and sometimes five or six specimens are found in one fish. Pennant says 'it enters the mouths of other fish when on the hooks attached to the lines which remain a little under water, and totally devours the whole except the skin and bones.' It is sometimes called the Hag, and also Borer, because it is said by some that the myxine pieces a small aperture in the skin, and thus makes its way into the body of the cod or other fishes which it attacks.

MYZOM'EA. [Meliphagidae, vol. x., p. 82.]
N.

N is a sound of the liquid or trembling series of letters. It is formed with the tongue as for the Latin where the teeth and plate meet, and the sound passes chiefly through the nasal passage. For the characters by which this letter is represented, see alphabet.

The letter n is subject to the following changes:

- It is interchangeable with m. Thus the Latin roots man, gen, gen (genus), appear in Saxon English as mind, bind or bound, kind or kin. The converse change is common in the provincial dialect of Somersetshire, where the English words wind, kind (behind), find, round, and, are pronounced with, kine, room, am; while on the contrary, manner is changed to munster. [D.]

- Before /n, /s was silent in Latin. Hence the town Con-a, at the junction of the Moselle and Rhine, is now called Koblenz. So the German fun is in English fire.

- It has often become a more complex nasal, and is equivalent to ng. Thus the German infinitive in en appears to be the parent not only of the participle in end, but of the substantive in eng, with which are connected the English participle and substantive of the same form in eng. The Somersetshire dialect prefers the n without a, as stannin, sparktin, starvin, for standing, sparkling, staring. The Sanscrit alphabet has a particular character for this sound.

- Before a vowel often forms but one syllable with that vowel, the or e being pronounced like the initial y. This sound is represented in Italian and French by gn, as Signor, Saigneur; in Spanish by ñ, as Señor; and in Portuguese by nh, as Senhor - all derived from the Latin Latin.

- N is interchangeable with l. Hence the double form of luncheon and luncheon; but see L.

- With m, particularly at the end of words. [M.]

- On and o are frequently interchanged. Hence the derivative of the sound of the in nouns, denoting time, as ord, Laco. The Portuguese also often discard an n so placed. On the other hand the Greek neuter nominative takes an n to which it is not entitled, as αναθημον. It is probably from a confusion between the two sounds that the quality has arisen, whether the letter ati of the Hebrew alphabet is an s or an n.

- R final with ſs. Hence the double forms of the Latin verbs serv and serva, separate; ster and stern, straw; sper and spera, kick, despise. Again star (and the Latin must once have been so pronounced for the forms in it) for the Greek stella, as from Fuerza comes puella) is in German stern. Spur in English is sporn in German, and of the same origin perhaps is the name of the Spurn Head, at the mouth of the Humber. The latter word (seen in com-burn-er, burn; and even the Latin cur-a, to run, has in Gothic the form wur-an, just as the south-western dialect of England has hirm, and the ordinary English, by a slipping of the r [R.] has, in the same south-western dialect before accurs, aura, orn, van, darn, are the forms employed for before, after, or either (Ger.-or) nor or neither, our.

- With s. This change will not be readily admitted without consideration, as the sounds appear so different. The change however is very parallel to the admitted change of l and d; and indeed as the latter letters are formed at the same part of the mouth, so are n and s. The close connection of the two letters will be most forcibly demonstrated by examples of suffixes in which the change occurs. Thus the English language has a double form of the plural suffix in en and es, as in oxen and asses. The Greek verb has the same variety; first, in τιττηθεις and τιττηθες, secondly, in θετικτις, which must have been the older form of τιττηθις. The Latin again has s suffix in scriptur-s, but the n in scribant. Again the Latin comparative has for its oldest suffix is, as melius, whence both melior and melius; or a better example occurs in ple-ros and ple-ro, ple-ros, ple-un. The other hand the Greek suffix is τιττηθεις, as αλληλον and αλληλος, from the same root as the Latin plus, and with the same meaning. The old genitive plural suffix in Latin appears to have been sum, as servorum, whence servorum. The suffix for female in Greek is τοιη, or ας, with perhaps an i prefixed, as βασιλιβα, μαλα, λεπτιθα, or βασιλιβιθα, τοιη, and in English we have, while the Germans have inn. Lastly, such verbs as ανβ-νιμη, have often for the radical part, which often takes the form ονη, as άνβ-ονη; and the same change appears in ερ-νη, Nεστφης, and ἄρανης. If the change be admitted, we see the cause of the anomaly in the Latin pron-o, posu, pr-e-stum.

10. N before s silent, but lengthening the preceding vowel. This fact is well exemplified throughout the grammar of the Greek language. The Latin has some peculiarity. Hence conseuil was sometimes written coosel, and when abbreviated was always represented by the three first of the sounded letters, viz. cos. So censor, infans, viciens, vicevus, are often found in the form ector, efas, vices, vicevum. We see too why the Greeks wrote the Latin words εκτεων, Κυκλοντος, with a long vowel in the first syllable. Lastly, while the Germans write gans, weitehen, the English have goose, wise.

11. N silent at times before s and th. The English word moose is derived from the French mouet and the Italian monete; and our word tooth in the older Gothic dialects was thent, thus corresponding as nearly as it ought to do with the Greek δοια and Latin dent.

N before v silent. Thus, in the Latin convention, assembly became convenitum (as it occurs in one of the oldest inscriptions), before it was reduced to convent, the assembly of the people, a word which modern editors, in spite of all the best MSS. and of etymology, persist in writing with c for the first letter. Similarly, from convenit came the French conven; and though the English generally say convent, yet the name Covent Garden is a proof that the n was not always pronounced even here.

An initial n is sometimes prefixed to, and sometimes taken from words by error of pronunciation, for instance, the meaning of name has been made to run, has in Gothic the form wurn-an, just as the south-western dialect of England has him, and the ordinary English, by a slipping of the r [R.] has, in the same south-western dialect before accurs, aura, orn, van, darn, are the forms employed for before, after, or either (Ger.-or) nor or neither, our.

Very similar is the prevailing error of calling the Greek negative particle απαραδεχθήσεται instead of an ampera, which corresponds to the Latin in and the English un, to say nothing of the Greek αμιθανή and the German ohne. In fact, n at the end of words is often pronounced very faintly.

The Somersetshire dialect has been referred to because its peculiarities have been recorded with great care in Mr. Jennings’s ‘Observations.’

NABATHÆI. [ Arab., p. 215.]

NABIS, tyrant of Sparta, attained the supreme power after the death of the tyrant Machanidas, who was killed about 296 a.c. He proved a cruel despot, and put to death a number of citizens. He had an ingenious engine of torture, described by Polybius (xiii.), which was called Nabis’s wife, and which he applied to those who would not deliver up their money to him. He allied himself with Philip II. of Macedon, and took possession of Argos and other parts of the Peloponnesus. After the defeat of Philip, and the peace which followed between him and Rome, the consul Flamininus marshaled against Nabis, defeated him, but after wards concurred to grant peace, taking his son as hostage to Rome. After the departure of the Romans, Nabis having begun to annoy his neighbours abroad, the Achæans sent against him their general Philopoemen, who defeated him and drove him back into Sparta, where Nabis was soon afterwards slain by his own Egyptian auxiliaries, b.c. 192. (Livy, xxv. 35.) He appears to have been a very able commander in war.

NABLIOUS. [Syria.]
NADOB, or NABAB, a corruption of the Hindustani Nuswab, which was the title of the governor of a province under the Mogul empire, such as the Nuswab of Aroet, of Oude, &c. (Gilechrist, Vocabulary.) Several of these became gradually independent during the decay of the empire, and are now either allies or dependents of the Anglo-Indian government. The word Nabob is sometimes used in Europe to mean a wealthy man who has made his fortune in India.

NABONASSAR, ERA OF. [Periods of Revolution.]

NABOPOLASSAR. [Babylon.]

NACHITOCHES. [Louisiana.]

NACRE. [Shell.]

NACRITE, a mineral usually occurring in mica slate, taking the place of the mica; so that the rock becomes a mixture of quartz and nacre. It occurs in four-sided prisms. Hardness 2-75. Colour silvery, or light greenish white. Lustré pearly, silky, splendent. Translucent. Specific gravity from 2-78 to 2-8. It occurs in Wicklow, Ireland, and in North America.

A specimen from Brunswick, Maine, analyzed by Dr. Thomson, gave—

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica</td>
<td>64.440</td>
</tr>
<tr>
<td>Alumina</td>
<td>28.844</td>
</tr>
<tr>
<td>Pyrochlore</td>
<td>4.428</td>
</tr>
<tr>
<td>Water</td>
<td>1.3</td>
</tr>
</tbody>
</table>

The crystals from Wicklow contained less oxide of iron, but a considerable portion of lime and of pyrochlore of manganese.

NADIR. [Zendih.]

NADIR SHAH was born on the 11th of November, 1668, at the small village of Abuver, near Killaat, about 30 miles north-east of Mushed in the province of Khorasan. He was originally called Nadir Kouli; that is, 'slave of the Wonderful,' or 'of God.' When he entered the service of Tâmasp, king of Persia, he assumed the name of Tâmasp Kouli Khân, that is, 'Khan, slave of Tâmasp;' but on his accession to the throne he resumed his original name of Nadir.

The father of Nadir belonged to the tribe of Afshâr, which was one of the seven Turkish tribes which had attached themselves to the kings of Persia. He was a person of no note or rank, and earned his livelihood by means of making costs of sheep-shearing, after his escape to the throne, used frequently to allude to his low birth. When the royal house of Delhi required that his son, who was about to marry a princess of that family, should give an account of his male ancestors for seven generations, Nadir could only point to the son of his father, the son of the sword, the grandson of the sword, and so on till they have a descent of seventy instead of seven generations.'

Nadir was distinguished in early years by his boldness and intrepidity. At the age of seventeen he was taken prisoner by the Uzbecks, who made annual incursions into Khorasan; but he effected his escape after a captivity of four years. On his return to Khorasan, he entered the service of a petty chief of his native country; but he became soon the chief of one of the leaders of a far different sect. From this employment he rose, by a transition by no means uncommon in the East, to a high rank in the service of the governor of Khorasan; but having displeased his master, he was degraded and severely punished. After this he resumed his occupation as a robber; and in consequence of the unsettled state of the country, he acquired in a short time no small degree of power. In order to understand clearly the circumstances which facilitated the rise of Nadir, it will be necessary to give a few remarks on the internal state of Persia at that time.

In the early part of the eighteenth century, Persia was attacked and eventually conquered by the Afghans. In 1722 Shah Husain, the Sufavean monarch of Persia, subdued the crown to Mahmud, the Afghan conqueror. Mahmud was succeeded in 1725 by Ashrâf, who reigned at Ispahan and had the supreme power, though Tâmasp, the son of Hussein, maintained a precarious independence in a distant part of the empire. Though the power of the Sufavean monarchs had been entirely overthrown by the Afghans, yet the latter had not been able to establish their own authority in the distant provinces of the kingdom: and the consequence was, that Khorasan and other remote provinces were left without any regular government. Nadir was one of the Afghans who had taken advantage of the discontents and the reduction of numbers to his standard; and having been invested with the supreme command by Tâmasp, which he acquired by putting to death Futtah Ali, who had previously commanded the forces of the king, he marched against the Afghans and took Mushed in the same year. He followed up his first success with a number of brilliant victories; Isphal, fell into his power; Ashrâf was taken and put to death; and by the close of the year 1729 few if any Afghans were left in Persia.

Such sudden and unexpected success rendered Nadir extremely ambitious; and he approached from this time to have resolved upon seizing the royal power as soon as circumstances would allow him to do so. In 1730 he received from Tâmasp a grant of the four finest provinces of the kingdom, Khorasan, Mazanderan, Seistan, and Kerman; and was invested with the same time to the government.

This honour however he declined; but at the same time he ordered money to be struck in his own name, which in the East is regarded as a virtual assumption of the sovereignty of the country.

In 1731 Nadir was engaged in a war with the Turks, whom he defeated on the plains of Hamadan; but having been obliged to march to Khorasan to quell a rebellion, Tâmasp seized the opportunity of assuming the command of the army, and marched himself against the Turks. Being defeated in battle, he concluded a treaty with the Persians by which he ceded to them several provinces of the Persian empire. As soon as Nadir heard of this treaty, he took advantage of the discontent which it excited, to carry into execution the plans he had long meditated for seizing the royal power. He published a proclamation, in which he bitterly inveighed against the peace, and announced his intention of prosecuting the war. Having thus secured the good will of the people, he invited Tâmasp to his camp; and on his arrival, he caused him to be seized and conducted away to Khorassan. Instead however of proclaiming himself king, he considered it more prudent for the present to place on the throne the son of Tâmasp, who was an infant eight months old.

When he had completed these arrangements, Nadir continued the war against the Turks, and after experiencing some reverses, he obliged them to sue for peace, which was granted in 1735. The infant sovereign of Persia having died about the same time, Nadir summoned a grand council, consisting of 1200 grandees of the eastern part of the kingdom, to meet in the plains of Choval M. Amin, which extend from the neighbourhood of Ardebil to the mouth of the Cyrus, in order to take into consideration the state of the kingdom. Upwards of 100,000 persons are said to have attended this assembly, in which sovereignty was offered to Nadir, who accepted it with apparent reluctance, on the 26th of February, 1736, on condition that the Shêsh sect, which had hitherto been supported by the great majority of the Persians, should be entirely abolished, and the Dervish sect be replaced by it. It is inferred from the act that the Imam Jâser should be placed at the head of the national religion; and that as there were four orthodox sects among the Sunnies, the Persians should be considered as a fifth, under the name of the sect of Jâser. It is difficult to determine the consequences which might be made to this violent change in the religion of the country, but it appears most probable that he wished to destroy the Shêsh sect, since it had always warmly supported the Dervishes. An offensive religious property of this sect, which was very considerable, was therefore confiscated. Nadir, and this impolitic attack upon the established religion, tended to produce discontent at the very commencement of his reign. Nadir himself appears to have possessed little or no religion; and the Korân as well as the Gospel were translated into Persian by his order, were frequently the subjects of his merriment and sarcasm.

Soon after his accession to the throne, Nadir made various preparations for the extinction of the Afghans as a separate power; and as this object could not be
plished without the reduction of the city and province of Candahar, which were then in the possession of the brothers of Mohammad, the late Afghan monarch of Persia, he commenced the war by besieging this province. The city of Candahar fell into his power in 1738, and many of the Afghans fled into the northern provinces of Hindustan, where they were hospitably received. Nâdir required the emperor of Delhi that none of the Afghan fugitives should be permitted to enter his dominions, but no attention was paid to his demands, he marched into Hindustan in the following year, and after defeating the Mogul troops, entered Delhi on the 8th of March, where he seized the immense treasures which had been amassed in the course of two centuries in Hindustan by the Mogul monarchs. Soon after his arrival, a report had been spreading through the city that Nâdir was dead, the inhabitants made a general attack upon his soldiers. Nâdir in vain endeavored to undeceive the people; not to make any permanent conquests in Hindustan. He returned to Persia in the following year, and directed his attention towards the reduction of the nations on the north of Persia. He crossed the Oxus in order to punish the sovereign of Bokhara, who had, during his absence in Hindustan, extended his dominion, and become almost a Holy-road to the west. The Turks, who frequently endeavored during his reign to extend their dominions, were always repulsed with loss; and the Russians were glad to enter into alliance with this all-powerful monarch. Nâdir had ruled by absolute authority and justice; but the latter part of his reign was disgraced by acts of the foulest tyranny and oppression. His conduct during this period has been described, even by a partial historian (Mirza Mahadi), as exceeding in cruelty and barbarity all that has been recorded in history; and he must be set down among the most bloody tyrants. In 1743 his eldest son, Reza Kouli, who had distinguished himself by his bravery in many actions, was deprived of sight by order of his father. The possession of absolute power appears to have called forth in the Persians, as in other parts of the world, a tendency to moral and intellectual decay. The idea of monarchy is universally condemned, even by those who are inclined to defend it. The destruction of the Persian nation was not the result of the weakness of her enemies, but the natural consequence of the degeneracy of her people. The character of Nâdir,' observes Sir John Malcolm, 'is perhaps exhibited in its truest colours in those impressions with which the memory of his actions has left upon the minds of his countrymen. They speak of him as a delirer and a destroyer; but while they expatiate with pride upon the cruelties, they overlook the good qualities of the man; and, upon the cruel enormities which disgraced the latter years of his reign; and neither his crimes nor the attempt he made to abolish their religion have subdued their gratitude towards the hero, who, in the breasts of his degraded countrymen, has been the object of their veneration, and restored Persia to her independence as a nation.' (History of Persia, vol. ii., p. 103.)

The life of Nâdir Shah was written in Persian by his secretary, Mirza Mohamed Mahadi Khan, who attended him in all his expeditions, and wrote his life in the purest and most elegant style of Persian, which was afterward translated into French by Sir W. Jones. Fraser also published from Persian MSS., which he obtained in India, 'The History of Nâdir Shah, formerly called Thomas Kuli Khan,' the present Emperor of Persia,' Lond., 1742. Many interesting particulars relating to Nâdir are given by Hakluyt in his 'Historical Account of the British Trade over the Caspian Sea,' Lond., 1753-4, which have considerable value, since Hakluyt had personal knowledge of many of the facts related. The character of Nâdir is also given by Malcolm in his second volume of the 'History of Persia.'

NASA. [Isopoda, vol. xiii., p. 53.]

NÉVIUS CNEIUS, a native of Campania, and one of the earliest Roman poets, was older than Ennius, and was contemporary to Andronicus. He served in the first Punic war, and afterwards wrote an epic poem on the same, 'De bello Punico,' and another called 'Ilias Cypria.' He also wrote several dramas in imitation of the Greek, and of the dramatic works of Ennius, which he had read. His 'Macchus exul,' 'Vendemiatores,' &c. Of all these, the titles and a few scattered lines are all that have come down to us. ('Fragmenta Poetarum Latinorum, quorum Opera non extant,' by Stephanus, 1564, and also Maittaire, 'Collecta Poetarum Italorum.')

Cicero, 'De Oratore,' ii. 69, 70, and iii. 12, praises him for his unaffected simplicity and natural humour. It appears that he had a genius for the satirical, which proved unlucky to him; for, having exposed in his plays some of the leading characters at Rome, among others, the poet and historian Polybius, he was imprisoned and banished as an alien. He is said to have retired to Utica in Africa, where he died about a.c. 204, according to the chronicle of Eusebius. Aulus Gellius (ii. 3) says, that being imprisoned at Rome, he composed two books of verses in his prison, through which he was restored to liberty.

NÉVUS (Nevus maternus, Mother Spot or Mole) is a congenital mark or morbid growth on a part of the skin. Nevii are of various kinds: some are merely yellowish or brown discolorations of the skin, and have been many times mistaken for birthmarks. A third kind are more extensive, and a fourth kind is a congenital mark or mole covered with thick-set coarse hair.

The nevi of the first kind rarely require treatment. Those of the second kind are important for three reasons: they are sometimes of an inflammatory nature, or to ulcerate and slough, or to produce severe haemorrhage by the rupture of some of their vessels. Many plans have been suggested for their removal. If they be not seated on an exposed part, or if they do not show a tendency to increase, they have only to be left with discretion. In other cases, the simplest and sometimes a sufficient means is the continued application of cold with moderately firm pressure; but a more certain method is to produce such an inflammation in them as may obliterate their vessels and reduce them to the common state of a freckle. The external nevi may be treated by compressing them with firm pressure, or by passing hair-clip pins and small incisions into them, or by passing hair-clip pins and small incisions into them, or by passing hair-clip pins and small incisions into them.
sutures [Hark-Lip] through parts of their substance, or by placing setons in them. The circumstances of each case must decide the choice between these several means, and the mode in which that which is selected may be best applied. Should complete removal be deemed necessary, the raw may be either cut out, or made to slough by tying them round the base. For the third kind of watry navi, excision is at once the simplest and the most secure means. It is a popular belief that navi and some other malformations of infants are consequent on an impression made on the mind of the mother during pregnancy, and that the mark always bears some resemblance to the object by which the impression was excited. It cannot be denied, that among the many cases of navi, some singular coincidences of the kind have occurred, and that in some of these the malformation might be deemed to have some connection with the object of the mother's fear or anxiety; but till it be determined that the number of these coincidences is greater than would occur according to the common laws of chances (which is as yet far from being proved), the hypothesis of a connection between the state of the mother's mind and the local conformation of the child, which is totally opposed to all physiological probability, cannot be admitted.

NAGASAKI. [JAPAN.]

NAGORE. [Marwar.]

NAGORE, a large town in the dominions of the Rajah of Barar, or Nagore, situated in 21° 9' N. lat. and 79° 10' E. long. It stands on a plain 1100 feet above the level of the sea. The town, which is of very irregular form, is about 7 miles in circumference, the buildings being placed in a very straggling manner, as is often seen in India. The greater part of the habitations are of adobe bricks. Some of the richer inhabitants have large brick-built houses with flat roofs, but the number of these is small, and is continually decreasing through the declining condition of the town. According to an enumeration made in 1825, Nagore contained at that time,

<table>
<thead>
<tr>
<th>Buildings</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houses built of brick</td>
<td>1,301</td>
</tr>
<tr>
<td>Tiled houses</td>
<td>11,120</td>
</tr>
<tr>
<td>Thatched shacks or huts</td>
<td>14,880</td>
</tr>
<tr>
<td>Matted huts of the lowest description</td>
<td>48</td>
</tr>
</tbody>
</table>

Total 27,249

The population at the same time amounted to 115,228.

The palace of the rajah is a large, heavy, and very plain building of brick, and is surrounded by the lowest kind of houses or hovels: it has never been completely finished.

The trade of Nagore, which was at no time very considerable, has declined since the fall of Appal Sahib, and the removal of the seat of government.

Nagore was, in 1825, the residence of a priest, who appeared that there were about 3400 domestic slaves, chiefly females, who had been purchased when children from their parents. The condition of slavery in this region does not bear much analogy to the state of degradation which is elsewhere implied in the name, since the severest punishment that can be inflicted for any crime committed by a slave is expulsion from the family of the master, and consequent manumission. On the other hand it would appear that the condition of free labour is one of great hardship, so that life has little value in the eyes of the Suicide is of very common occurrence, being resorted to upon the slightest occasions of domestic quarrel, or of real or supposed injury: the more usual modes employed for self-destruction are poison, drowning, falling, and by hanging.

Nagore is distant 733 miles from Calcutta, 577 miles from Bombay, 673 from Madras, 486 from Poonah, and 631 from Delhi, travelling distances. (Report of Committee of House of Commons in 1832; Rennell's Memoir of a Map of Hindostan.)

NAHUM (Naîm, Naîm). one of the twelve minor Hebrew prophets, was called the Eikoshite (Eikoshites, Nahum, l. 1), probably from the place of his birth, Eikosh, a village in Galilee (Hieronymus, Proem in Nahum; Eusebius, Chronicon, art. Eikeni). He prophesied in the kingdom of Judah, whether we may suppose he had gone after the overthrow of Israel. His age can only be conjectured from certain indications contained in his prophecy, from which it appears that both the kingdoms of Israel and Judah had been subject to severe attacks from the Assyrians (chap. i.), and that the captivity of Israel had already taken place (chap. ii. 2). He is thought to allude to the destruction of Sennacherib's army (l. 11-14), as having occurred recently (ii. 1). He also prophesies the speedy restoration of Judah to prosperity (l. 15; ii. 7), which happened in the reign of Josiah. These circumstances would place his prophecy towards the close of Hezekiah's reign, about 705 B.C.

Some suppose that the destruction of Thebes and the captivity of the Egyptians and Ethiopians, spoken of in Nahum (ii. 8-10), are the same events to which Isaiah refers (chap. iii. xxii). His prophecy is a complete poem, the subject of which is the 'burden of Nineveh' (l. 1), that is, the destruction of Nineveh and the Assyrian empire, as the punishment of its wickedness and oppression. The prophecy commences with a sublime description of the power of the deluge, and of his enemies and protecting his people, and proceeds to foretell the impending destruction of Nineveh (chaps. i. ii.), which is described in the most vivid poetry in chap. iii. The event which he prophesied took place in the year 625 B.C., in the reign of Chrysladanus, king of Assyria, when Nineveh was destroyed and the Assyrian empire overthrown by Cyaxares I. and Nabopolassar.

'None of the minor prophets seem to equal Nahum in boldness, ardour, and sublimity. His prophecy too forms a regular and coherent poem, and is the most impressive in the Canon. The power of the deluge is magnificently stated, it is truly majestic; the preparation for the destruction of Nineveh, and the description of its downfall and desolation, are expressed in the most vivid colours, and the destruction itself is conceived with the highest degree of beauty (Sp. Lowth, Prooem, xi.). Some expressions and images, which are peculiar to him, occur in i. 10; ii. 4-9; iii. 17.

The canonical authority of Nahum's prophecy is undoubted.

N. Rosenmuller, Scholia in Vet. Test.; Winer's Biblischer Realwörterbuch; The Introductions of Eichborn, Bertoldt, Jahn, De Wette, and Horne.)

NAI.A, Laurenti's name for a genus of highly venomous serpents, Uraeus and Aspis of Wagner.

It characterises the form and colour of the Vipers (Vipera of Dauidin), and immediately preceding Elaps (Schn., part). Mr. Gray makes Naina the second subfamily of his Viperidae, Vipera being the first. Naina, which is characterised by Mr. Gray as having the 'head broad behind,' with 'the nostrils being level with the eyes,' is immediately succeeded by Elapidae, and thus the genus Naias, in his arrangement, stands between Pelus (Merrem) and Sepidon of the same author. (On the Genera of Reptiles, in Annals of Phil. 1825.)

Mr. Swainson, in his 'Classification of Reptiles' ('Natural History of Reptiles, Amphibians and Fishes, vol. ii.'), places the genus Naja among the Crotalidae, his second family of Ophidians, or serpents, and arranges it between Cerastes and Flalurus. He gives the following as the subgenera:—

Sepioidem and Elaps, and thus characterises the sub-genus Naja—Neck capable of being raised, and a narrower dorsal scales linear; tail conical; subcaudal plates arranged in two rows.

Geographical Distribution.—This form appears to be confined to the Old World.

The Asiatic species, Coluber Naja of Linneus, Coluber corythus of Gmelin? Vipera Naja of Dauidin, Naja tripudians of Merrem, Naja lutea of Laurenti, Cobra de Copeiell (adder with a hood) of the Asiatic Portuguese, Serpent e cansado of the French, Sepalidae of the English, Naja and Chinta naga of the native, may be considered as the type of the genus.

Generic Character.—Head, with nine plates behind, broad; neck very expansible, covering the head like a hood; tail lanceolate.

The expansion of the neck and upper part of the body is effected by the anterior ribs, which has the power of raising and bringing forward so as to dilate that portion into more or less large. When this disk is thus dilated in the Naja tripudiana present, there is no other part of it no bad representation of a pair of spectacles, or rather baramcles, reversed, for there is no trace of the lateral pieces by which spectacles are attached to the head of the wearer. The animal is brown above, and bluish-white beneath. The following cut will convey some idea of the form of this snake, with the hood or disk expanded.
Colonel Briggs informs us that this active and deadly serpent is sometimes worshiped in temples in India, where it is pampered with milk and sugar by the priests, and he notices it as a surprising instance of the effect of kind treatment in subduing the most irritable spirits. ‘The Hindus,’ says the Colonel, in continuation, ‘have a notion that the sagacity and the long-cherished malice of this worm are equal to that of man. I have seen them come out from their holes in the temples, when a pipe has been played to them, and feed out of the hand as tamely as any domestic animal; and it is when in this state of docility, so opposite to their shy but impetuous nature, the common people believe that the Deity has condescended to adopt that form. It seems probable that this hooded snake was the dragon of the heathen worship; and the shape of its head and its activity when in a state of excitement probably gave rise to the fable of its being winged.’
NAI

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It is pretended that the root of the Ophiurhiza mungos is a specific against the bite of this serpent. The priests and jugglers however, who make them dance to astonish or amuse the people, make all sure, there is little doubt, by extracting the poison-fangs.

This formidable species, or at least some species of hooded snake, according to the records of travellers, grows to a considerable length. Captain Percival gives the following ac-

count of its size and habits, in his "Account of the Island of Ceylon," 4th, 1803—

The Cobra Capella, or hooded snake, is found here from six to ten feet long. Its bite is mortal. The natives find the herb pointed out by the techeunma a remedy, if timely applied. When curried and preparing to attack, it raises its head and body to the height of three or four feet in the air. While at this elevation, and the rest of the body is coiled up to accelerate and give force to the spring. At this instant it distends from head to membrane in the form of a hood, from which it receives its name. This membrane lies along the forehead and the side of the head, and when excited gets into a state of irritation and is about to attack its foe. When the hood is erected it completely alters the appearance of the head, and discloses a curious streak in the shape of a pair of spectacles, and sometimes of a horse-shoe. The eye is concealed under the hood, which seemingly serves to give warning to all those within this animal's reach that he is preparing to attack them. Without this signal he would be very dangerous indeed, as his motions afterwards are too rapid to be avoided. I have more than once seen the eye of this snake, when the hood was escaped from merely by the object of his vengeance, at a distance of a yard. Timely observing his preparations. One remarkable character-

istic of these dangerous serpents is their fondness for music. Even when newly caught they seem to listen with peculiar attention, and even when writing the notes, attitudes. The Indian jugglers impress greatly on this instinc-

t and, after taming them by degrees, instruct them even to keep time to their flageolets. — Dr. de Capello from Dr. Davy in Ceylon was nearly six feet long; and he adds that the general length is between two and four feet. The colour varied:—

those of a light colour were called high-caste snakes by the natives, and those of a dark colour low-caste. "The natives," says Dr. Davy, "generally reverence this snake, and avoid it, if possible. Even when they find one in their house, they will not kill it, but, putting it into a bag, throw it out of doors. They believe that this snake has a good and generous disposition, and that it will do no harm to man."

Dr. Davy, by his account of the irritations and sootherings with which the snake-charmers excite and allay the temper of this serpent. He records several instances of the operation of the poison, the first arising from a serpent found in a bag floating down the Kalanguanga. It was about five feet long, and about six inches in circumference in the broadest part. This snake bit a hen, fixing its fangs in the skin covering the lower part of the left pectoral muscle, and keeping its hold about two or three seconds, when Dr. Davy succeeded in shaking it off. The hen, which at first seemed to be little affected, died eight hours after she was bitten.

The reader will find other experiments recorded by the author; but the bite which was followed by the most speedy death was inflicted by Monsieur de Capello upon a young cock. 'The snake fastened on the thigh, and inflicted a rather severe wound, from which some blood flowed. The cock became instantly lame, and in less than a minute was unable to stand. In about five minutes his respiration became hurried and rather laborious; some slight depres-

tions took place. In about ten minutes he appeared to be in a comatose state, and for about five minutes he continued in this state, his respiration gradually becoming more feeble and laboured. Then his head began to convulse, and was hardly perceptible, he was seized with a convulsive fit, which in the course of the next minute returned four or five times, each less violent than the former, and the last proved fatal." (An Account of the Interior of Ceylon, &c., by John H. Salt., 4th, London, 1841.)

We owe to Dr. Cantor, who has added so much to our knowledge of the natural history of Asiatic serpents, the introduction of a new genus of hooded snakes, *Hamadryas*, which will probably find its proper place in the series of a subfamily, but is found by Professor Cope to belong between that genus and *Bungarus* (Deudon), which two forms, in his opinion, it will be found to connect to-

gether.

Hamadryas. (Cantor.)

Generic Character.—Head broad, subcylindrical, with a short obtuse rostrum, covered above with fifteen scuta. Cheeks tumid. Eyes large, prominent, pupil round. Nastrils widely opened within the confines of two scuta. Gape very ample, subundulated. Poison-fangs anterior, and united with the maxillary; some of them alike. Body thick, smooth, imbricated with smooth scales disposed in oblique rows. Tail short, covered with scuta and scutella, its apex acute. (Cantor.)

Example. *Hamadryas ophiophagus*. (Cantor.)

Description.—Above of black, with black sagittal stripe, abdomen glaucous, marbled with black. The Hindu-name is Sunkur-Choor.

Locality.—Bengal.

*Hamadryas* is distinguished from the *Bungurus* and *Naia*.

In consequence of the strong resemblance in the general appearance between the *Naia* and the *Hamadryas*, when first my attention became attracted to the latter, I thought I could refer this serpent to that genus; and it was not until I was able to examine a specimen whose poison-fangs were untouched (those of the first specimens I saw having been drawn by the natives, who are greatly afraid of the serpent), that I discovered the maxillary teeth behind the poison-fangs.

*Hamadryas ophiophagus* differs from the *Naia* principally in

1. By its maxillary teeth.

2. By the strongly expanded spines on the orophtalpe inferius.

3. By the integuments covering the head.

4. By the integuments covering the abdominal surface of the tail.

5. By its colour.

6. By its size.

According to the natives, the *Hamadryas* feeds chiefly upon other serpents: in one I dissected I found remains of a good-sized Mura, which fact may account for its arboreal mode of life. It feeds in the bushes, along the banks of the rivers, observed numbers of those large lizards among the branches of trees watching for birds.

*The power of abstaining from food, generally speaking.*
characteristic of the serpents, but is in a comparatively small degree possessed by this species; the most protracted narration amounts to a period of about one month; while the snake elegans, the Naja triptioides, and the Bungarus annularis, have, without inconvenience, been confined in cages without any food for more than ten months. Two specimens of the Hamadryas in my possession were regularly fed by giving them a serpent, no matter whether venomous or not, after which they were left alone; and, on being brought near, the serpent begins to hiss loudly, and, ex- panding the hood, rises two or three feet; and retaining this attitude, as if to take a sure aim, watching the movements of the prey, darts upon it in the same manner as the Naja triptiroides, in several times during the year. The prey, by degrees swallowed, the act is followed by a lethargic state, lasting for about twelve hours. Such of the other Indian venomous serpents, the habits of which I have had opportunity to study from life, show the same readiness and inclination to swallow the man who overcomes them, and to attack men or animals when provoked or driven by hunger; and I am not aware of any other of those serpents being recorded as preying upon its own kind. A short time ago six to eight inches by circumference the head of a man I received from high authority the following fact, which throws a light upon the habits of the Naja of Southern Africa, one of which, when caught and kept, threw up the body of a Vipera artios (Vip. brachyrhynus, Cuvier), which beggars of having been submitted to the process of diges-

tion. The Hamadryas, like the greater number of Indian serpents, evinces a great partiality to water; with the exception of the tree-serpents (Leptophis, Bell), they all are not over nine feet when fully grown, and the organ is not situated immediately in the cavity of the mouth, become in the serpents two different acts. Specimens of this serpent in my possession changed the skin every third or fourth month, a process which takes place in all serpents, and is followed by them in the Hamadryas is very fierce, and is always ready not only to attack, but to pursue, when opposed: while the Cophias, the Viper, the Naja, and the Bungarus, merely defend themselves; which done, they always retreat, provided no further attack be made. It is certain that individuals are found upwards of twelve feet in length, a statement probably not exaggerated, as I have myself seen specimens from eight to ten feet in length, and from six to eight inches in circumference. I have often heard it asserted that "Cobras" (which name is naturally enough given to every hooded serpent) have been met with of an enormous size, but I strongly doubt their belonging to the genus Naja: among a considerable number which have come into my possession, I have never known of the Cophias to exceed six feet in length, while the common size is about four feet. Some time before I discovered the Hamadryas, I was favoured by J. W. Grant, Esq., of the Hon. Company's Civil Service, with an interesting description of a gigantic hooded serpent he had observed in the upper provinces, and which, he remarked, was not a Naja. By inspection this gentleman denied the Hamadryas to be identical with the above-mentioned.

The natives describe another hooded serpent, which is said to attain a much larger size than the Hamadryas, and which, to conclude from the vernacular name, "Mony Chooor," is perhaps another nearly allied species. The fresh poison of the Hamadryas is a pellucid taste- less fluid, in consistency like a thin solution of gum arabica, in which the grains are surrounded by a reddish or white sanguineous matter. Paper, as in the case with the fresh poison of the Cophias viridis, Vipera elegans, Naja triptioides, Bungarus annularis, and Bung. corallina: when kept for some time it acts much stronger upon the skin than the latter, but if kept, it loses considerably, if not entirely, its deleterious effects.

* M. Schlegel is of opinion that serpents never drink. (Essai sur la Physiologie des Serpents, Partie Générale.) As mentioned above, I have had opportunity of ascertain ing the fact that a great number of Indian serpents, as has been already noted, drink no water and are not饮ed by it. M. Schlegel says, "I have never heard of tasting the poison of a living serpent; for besides the above-mentioned genera of Indian venomous serpents, I found the fresh..."
nation satisfied him fully as to the establishment of the difference of sexes. The female, sustaining her very large burthen, naturally requires, he observes, more space within the valves; hence an enlargement of the posterior portion of the shell is generally found, differing in its form in various species. The following figures, representing the oviducts of the species whose names are printed under the cuts, are given by Mr. Lea.

In plate xx. (Mr. Garner's paper on the 'Lamellibranchiate Conchifera') will be found a figure of the animal from the ovarium of an *Anodonta*, as seen in the field of the microscope (1 inch focus); and in pl. vili. the disposition of the heart, pericardium, excretory organs, &c., of *Anodonta unio* is shown.

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**Anodonta Undulata.**

Apparently nearly ready to spawn.

Mr. Lea remarks that the mass of the lobes in this species differs from that of *A. fluviatilis*, in presenting a darker appearance and a very curious arrangement of the oviducts. The ova are placed in a kind of sac lying across the lobe, and presenting one end to the stomach and the other to the mantle of the animal. They lie so close together, as to take the form on the exterior, like the cells of a honeycomb. This, Mr. Lea says, is of course produced by pressure. Some of these sacs, when carefully removed, were found to contain as many as twelve ova, each with a perfect living shell in it, having a brownish epidermis: a in the cut represents.

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**Unio Involutus.**

1. soft parts showing interior of oviduct; 2, showing exterior of oviduct, the mantle being removed; a, mouth; b, great anterior muscle; c, right superior branchia; d, great posterior muscle; e, inferior right branchia; f, right oviduct; g, foot; h, superior left branchia; i, interior view of oviduct; 3, 4, shell.

Appearances exhibited by female *Naia* according to Mr. Lea, one of the valves removed and the oviducts exposed.

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**Unio Ochraceus.**

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**Unio Carinatus.**

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Two females of *Naia radulae* as they were seen with the parts protruded, as they lay at the bottom of a basin of water. Mr. Lea states that these branches put on two quite different forms as regards the interior portion of the mantle, as exhibited above.
NAI 65

The Museum of the Royal College of Surgeons in London (Physiological series) are the following preparations.

No. 1092. The soft parts of a fresh-water muscle (Anodon tanygnus) injected and prepared to show the four branchiae, which unite below the foot. The convolutions of intestine at the base of the foot and the passage of the rectum through the heart are also shown. No. 1093. The soft parts of a fresh-water muscle, with both mantle-lobes and heart dissected away, so as clearly to display the branchiae and labial processes. The orifice of the branchial vessels and water-tubes are well displayed at the base of the branchiae. The first series of vessels, which run transversely across the branchiae, give off lateral ramules at right angles, and form a most delicate vascular net-work to receive the influence of the respiratory currents. No. 1094. A transverse section of the branchiae of a fresh-water muscle, injected, dried, and preserved in oil of turpentine: a beautiful display of the vascularity and delicate structure of the respiratory organ. No. 66. A transverse section of the connecting ligament of the valves of a fresh-water muscle, showing that its structure is fibrous, the fibres being perpendicular to the plane of the shell, and converging towards the centre, so that when the shell is closed these fibres are in a state of compression, and consequently have a constant tendency to separate the adductor muscle, open the shell, and retain it in that state, independent of any muscular action. No. 67. A longitudinal section of the same ligament, made by dividing the valves from one another.

The brilliant and variously coloured nacre with which many of the species are lined and the extreme thickness of some of the shells are very remarkable. That pearls should be found in them will not surprise those whose attention has been drawn to their internal structure. Pennant remarks that Mya Margaritifera of Linnaeus (Unio elementus) is noted for producing quantities of pearls, and formerly there were regular fisheries in many of our rivers to obtain them. As many as sixteen have been taken from one shell. The Esk and the Conway were famous in this way. The latter river, in the days of Camden, was noted for them. Sir Richard Wynn of Gwydir, chamberlain to Catherine, queen to Charles II., is said to have presented her majesty with a Conway pearl which is to this day honoured with a piece in the regal crown. Pennant, while he states this, adds, that the shells are called by the Welsh, Crgen Dilau, or Deluge Shells, as if left there by the deluge. The river Irk in Cumberland also produced them; and Sir John Hawkins, the circumvagator, had a patent for fishing that river. Britain indeed had early secured a reputation for its pearls; for, according to Suetonius, they were Caesar's inducement for undertaking his British expedition. (Jul. Cesar, c. 47.) This however does not seem very probable. Pliny (ix. 35) indeed speaks of the pearls of our islands as small and ill coloured, and refers to the brast-plate that Caesar himself had brought home and dedicated to Venus Genetrix in her temple, adding that he wished it to be understood that the offering was formed of British pearls.

Ireland has produced pearls of considerable size and some value, especially in the rivers of Tyrone and Donegal. One weighed 36 carats, and was valued at 40l., but it was foul, and so lost much of its worth. Other single pearls were sold for 4l. 10s., and for as much as 10l. The last was sold a second time to Lady Glenlyon, who put it into a necklace, and refused 80l. for it from the duchess of Ormond. Pennant, who quotes from the abridgement of the 'Phil. Trans.' speaks of the last century as the time when these large Irish pearls were procured. We have seen some lately of considerable size, fair shape, and pretty good colour.

Mr. Lea, in his final arrangement, admits only two genera, Margarita and Paitiris. The first of these has been occupied by Leach to designate a genus of marine conchiflers. [Margarita] We shall however retain the name in this article, in order to present to the reader the leading features of Mr. Lea's arrangement and the forms of the shells.

Margarita. (Lea.)


Non-Symphyone.

Example, Unio Pictorum, common in our English rivers shell and animal figured in the article Conchifera, 1st vii. p. 433.


Example, Alasmomodonta undulata. (Say.)

Alasmomodonta undulata.
Symphynote.
Example, *Alasmadora complanata* (Barnes).

3. Subgenus, *Dipsas*.
*Having a linear tooth under the dorsal margin.*
Symphynote only.
Example, *Dipsas plicatus* (Leach).

*Having no teeth.*
Symphynote.
Example, *Symphynota magnifica* (Lea.)

Non-Symphynote.
Example, *Anodonta fluviatilis* (Mytilus fluviatilis of Sjander, Dillwyn, &c; *Anodonta cataracta* of Say).
Margaritana, 29 admitted, 2 unknown. (Europe, North America, South America, and perhaps Africa.)

Diphas, 2 recent. (Asia.)

Anodonta, 58 admitted; 7 unknown to Lea. (Europe, Asia, Africa, North America, South America, New Holland.)

Iridina, 2 recent. (Africa.)

Spinata, 6 recent. (Africa, South America.)

M. Deshayes (last edition of Lamarck), after reviewing the state of the question, comes to the conclusion that all the various genera cannot form and ought not to form more than one genus, constituting singly the family of the *Naiades*. He refers to Mr. Lea's work favourably, but charges him with an omission which would have been almost unavoidable in an author who had undertaken a monograph of this extensive family. It is but common justice to Mr. Lea to insert his conclusive answer to this charge: 'I will be excused,' says Mr. Lea, 'in taking this opportunity to correct an erroneous impression on the mind of M. Deshayes; he says that I was not able to examine the museum of Paris. "Malgré cette imperfection qu'il ne pouvait empêcher, le travail de M. Lea se recommande à l'attention des naturalistes par des observations judicieuses, des descriptions exactes, etc. It would be strange indeed if, after spending so many years in the study of this family that I should neglect, while in Paris, to see the collections from which Lamarck made so many descriptions. I was frequently at the museum, and, on one particular occasion, by appointment of MM. Blainville and Férrussac, arranged, in the presence of these and other gentlemen, all the species of the *Naiades* that were in the museum, and named them; and also presented to the museum about 15 species which were new to that great national institution. I also did the same thing for Baron Férrussac, having designated every specimen in his cabinet belonging to this family.'

**Fossil Naiades.**

Speaking of *Anodon*, Mr. G. B. Sowerby (Genera) says that, as there does not know of any fossil species, unless well justified in considering the bivalve from the coal-measures figured in Sowerby's "British Mineralogy," tab. 386, under the name of *Mytilus crassus*, as an *Anodon*. This Mr. G. B. Sowerby states he is unable, after examining the specimen, to demonstrate, though he finds strong reasons for believing that it may prove so. When treating, in the same work, of the genus *Unio*, the author states that there are many fossil shells, particularly in the coal-measures, which are referred to this genus; and, he thinks, correctly so, though he has never been able to consult the character of the hinge; but, judging from the cast of the inside, which is very common, he finds no difference between it and casts that he made from the inside of recent *Uniones*. He does not however feel authorised to pronounce the shell published in *Min. Con.*, t. 153 (*Unio crassus*), as an *Unio*; for its hinge, he observes, is far from being characteristic, and it is not the compound muscular impression of that genus. He thinks that it agrees more nearly with some of the Lamarkian *Cypricardia*; at the same time he confesses his doubts about the probability of that fossil being ultimately adopted. His attention appears to have been next drawn to *Unio Listeri*, *U. hybridus*, *concinus*, and others figured in *Min. Con.*, and placed in the oolite series by Conybeare and Phillips; and, in confirmation of some of the observations recorded in their "Outlines," he remarks that these, together with *Unio crassus* (*Min. Con.*, t. 185), all want some of the principal distinguishing marks of the *Unio*, and, judging even from their hinges, he remarks that we should certainly hesitate to place them with *Unio*. He adds that he has never seen any perfect specimen of the shell published as *Unio*, from the freshwater formation; but if he may be allowed to decide from such fragments as he had examined, and from its geological position, he should hardly feel a doubt upon the subject. Notwithstanding however what he has above advanced, he concludes by observing that he must still consider the existence either of *Unio* or *Anodon* in any bed below the chalk, except the coal-measures, as exceedingly problematical. M. Deshayes (Tables) makes the number of fossil species of *Unio* (tertiary), 2; of *Anodon*, 1; of *Hyria*, none; and of *Iridina*, none. In the last edition of Lamark he records 2 of *Unio*—*U. concinns* (Sow.), from the inferior oolite near Banbury, in Oxfordshire, and *Unio hybridus* (Sow.) from the Nottinghamshire beds; both from *Min. Con.* Dr. Mantell records a *Unio* (Brit. *Min.*, t. 500) from the

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**Unio spinosus.**

Mr. Lea, in his Tables, enumerates 323 recent species as admitted, and 29 as unknown to him or doubtful.

Of the subgenus *Unio*, 235 recent, and 20 which he has not been able to admit as certain. (Europe, Asia, Africa, North America, South America, New Holland. By far most abundant in North America.)

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**Unio purpureus.**

Example, *Unio spinosus* (Lea). N. B. Bartram appears to have been the first who discovered this species. He, apparently, found it in the Mississippi. See his 'Travels,' p. 431.
plastic clay (Castle Hill, near Newhaven), and Uniones porrectus, compressus, antiquus, aduncus, and cordiformis, from the Tilgate beds (middle division). Also Unio antiquus from the Ashburnham beds (lower division of the Hastings deposits). Professor Phillips (Yorkshire) enumerates Uniones Liisteri, concinnus, and crustaciusculus, from the lias; pergrinatus from the cornbrash; and obductus from the inferior oolites and marlstone. Mr. Lowndale (oolitic district of Bath) records Unio concinnus from the alluvium (Weston) and from the inferior oolite (Widcombe Hill); and an unnamed Unio from the Kellowsay rock (Christian Malford). Dr. Fiton, in his table (Strata below the Oolite) notes Unione aduncus, antiquus, compressus, Gualt. , Martelli, Martinii, porrectus, subtruncatus, a species not distinct, a large new species, and some other species probably new, from the Weald clay, Hastings sand, and Fawkham. Mr. Lea gives 21 as the number of fossil Uniones, and one (doubtful) of Anodom.

The last-named author, in his arrangement founded on the form of the hinge, has deemed it better not to adopt D'Orbigny's genus Mystioidea [Myxioidea] established on the natural character of the animal. In its perforating habit it resembles, according to Mr. Lea, its Unio orientis, which buries itself about 12 inches below the surface of the sand in which it lives.

The genera Diplidon, Triploidon, &c. of Spius can hardly be called aquatic, as their breathing organs are situated on the surface.

NAIAD'S otherwise called Naiades and Fluviates, are aquatic plants forming a small natural order of Endogones, remarkable for the unusual simplicity of their organization. As they live constantly below water, they require no epidermis for protection; they have no roots, nor do they cast out roots through the mesoplantar, or central stratum of parenchyma.

Their sexes are usually separate, and sometimes on different plants. Their floral envelopes are either deficient or in the form of a membranous tube or cup, or consist of scales, to the face of which anthers or carps adhere. The latter are either solitary or in pairs or fours, one-seeded, one-celled, with the ovule generally pendulous from the central suture. Their fruit is usually indehiscent and nut-like, but sometimes it is 2-valved or irregularly ruptured. The embryo has no albumen, and consists of a very large radicle, usually folded up, and containing a slender plumule lying in the cavity so formed.

These plants are inconspicuous objects, inhabiting both fresh and salt water in all parts of the world. In this country, the genera Potamogeton, a common inhabitant of rivers and ponds, elevating its little brown spikes of flowers above water during the time of fertilization; Zannichellia, a thread-shaped plant, with minute axillary flowers, constantly submerged; and Zostera, or sea-wrack, with long, narrow, riband-like leaves, inhabiting estuaries of the sea, are the most common.

NAIAD'S (Naia, Naiad) were female deities in the Greek and Roman mythology, who were supposed to preside over rivers, brooks, and springs. They are represented as young and beautiful nymphs (Hom., Od., xii. 103). 1031, of whom Antiope, according to Virgil, was the most lovely (Ecli., vi. 21). Many of the heroes of the Homerian poems are described as the offspring of Naiads.

According to Pausanias (vi. 4, § 2), the Naiads were called, by the Arcadians, Dryades and Epimeleides. [Nymphs.]

NAIRN. [NAIRNSHIRE.]

NAIRN, a small county in the northern highlands of Scotland. It is bounded on the north by Moray Firth, on the east by Elginshire, on the south-east by a detached portion of Inverness-shire, on the south by a detached portion of Elginshire, and on the south-west and west by Ross-shire. It is situated about 5° N. lat., and between 4° 40' and 4° 5' W. long. Its form is irregular; the greatest length is, from north by east to south by west, from the eastern extremity of the coast to the neighbourhood of Cairn Glassburn and the Lennach hills. The area of the county is given by Dr. Playfair (Description of Scotland) and by Mr. MacCullogh, as containing 502,400 acres or 803 square miles; the population, by the census of 1831, was 9354. Two detached portions belong to the county, the district of Ferrintosh or Fairnesh, near Dingwall in Ross-shire, and Dunmaglass in Inverness-shire. These detached parts are not included in the inquisitions, and are separated from the county by more than 16 miles above; but the population is included in the foregoing number.

It is one of the least of the Scottish counties in extent, and is exceeded in population by all the others, except Kinross and Selkirk, and perhaps Cromarty, the population of which is not distinguished in the Return from that of Ross.

The southern part of the county is hilly; the hills form two irregular groups, separated by the river Findhorn, which runs through the county. The principal summits are Ben Bui, Cairn Our, Craigach, and Cairn Glascarn, all on the border towards Inverness-shire; Cairn Glassburn and Cairn Dui, on the border toward Elginshire. The valley between the two groups of hills in which the Findhorn finds its course is called Strathdon. Along the coast, which extends about eight miles from east by north to west by south, is a narrow border of level country extending inland from one to six miles. The hill country belongs to one of the least interesting and least frequent parts of the highlands.

The principal rivers are the Findhorn and the Nairn, which both rise in Inverness-shire, and flow through the county in a north-east direction. The Nairn has about eleven miles of its course within or upon the border of Nairnshire, and falls into Moray Firth at the burgh of Nairn, which is a stream of little consequence; its mouth forms an indifferently good harbour, and the salmon-fishery in its waters is of no great value. Its name in the Celtic language is Uisg Nearadh, "the water of alders;" from this has been derived its usual designation, which it has continued to bear through to the shire. The Findhorn has about eleven miles of its course in this county, through which it passes to enter Elginshire, where it has its outfall. A number of small streams flow into these rivers, especially into the Findhorn. There are a few small lakes in the county. The largest is the Lake of the Clans, about a mile long and half a mile broad, about four miles south-west of the burgh of Nairn; Cranloch, near the western extremity of the coast, is rather larger than the Lake of the Clans, but not quite so broad. The other lakes are more or less small.

The mineral treasures of the county are not great. There is abundance of marl, which is valuable for manure, but little used. Expectations were once entertained of finding coal on a battery of dark blue clay, which is inflammable and is worked; it neither loses bulk nor is powdered by being heated. There is freestone in Nairn parish, and a few men are employed in the quarries. Pest is dug.

The soil is diversified. In the eastern part of the county, along the coast it is generally a rich loam on a sandy gravelly bottom; in the western part it is either clay or a sharp gravelly mould. In the mountainous districts it is chiefly a sandy loam, full of gravel and small stone. 12. 13.
The climate in this part is cold and stormy, and the crops are later than along the coast, where the temperature is more favourable. Yet the crops are rarely if ever cut off by frost, nor are they materially retarded by the autumnal rains.

The agriculture of Nairnshire is in a very backward state. About twenty or thirty years since the farms were small and the tenantry poor. Most of them held their farms without lease, and the tenants were the proprietors of their lands, so that agricultural practice, which had been long established; but the richer tenants and the proprietors were more willing to break through the shackles of custom and to introduce improvements. The small tenable land was small, especially in the Highland district, and almost the whole country was unenclosed. Manure, formed of dung mixed with turp and sand, was accumulated by means of sheep, which on the small farms (on nearly all of which a small flock was kept) were allowed to wander at large and to feed on cloaks and cait and horses. This manure was spread over a portion, perhaps a fourth, of the farm, which portion, after three ploughings, was sown with bear or big, and this crop was succeeded by two or three successive crops of oats. A small plot was allowed for potatoes, and occasionally a patch for growing flax for domestic use. When, as frequently happened, the land became too much overrun with weeds to afford an adequate return, it was left waste for one or two years, and the horses and cows were turned in to feed upon it. The forest land was of small extent, and the antient castles were larger than the inhabited farms.

The population of the county in 1831 was thus classified: 2074 inhabited houses; 9354 families, of which 742 families were chiefly employed in agriculture; 487 families in trade, manufactures, and handicrafts; and 1617 families in other occupations: the population consisted of 4307 males and 5047 females; total, 9354.

There are no manufactures carried on in the county except that of woollen cloth, which in 1831 employed about 40 men, who converted yarn into cloth for family use.

The coast fishery gave employment to 127 men in the parish of Nairn; and 532 men were engaged in retail trade or in handicrafts, chiefly carpenters, masons, shoemakers, tailors, and bakers.

The county has no other subdivisions than parishes, of which it contains three entire, and portions of seven others, the remaining part of which is in Inverness, Elgin, Ross, or Cromartyshire, and most of them in the first.

The county touches on the north the ancient burgh of Nairn, situated on the west side of the river Nairn, near its mouth. It appears to have been founded by William the Lion (who reigned from 1165 to 1214), and was originally called Invernaven. The town was afterwards granted by Robert Bruce (who reigned from 1306 to 1329) to the earl of Ross, Lord of the Isles, under whose descendants it probably continued till A.D. 1475. The site of the more ancient town was at some distance from that of the present town; this change has resulted from the gradual recession of the land, and the shifting of the bed of the river. The ruins of the ancient castle which defended the town have been long covered by the sea; but thirty years ago some of the older inhabitants remembered to have seen them at spring-tides. The present town consists of Nairn and the parish of Nairn, a number of smaller streets or lanes branching from it at right angles. Some new streets of greater regularity have been laid out on the north side of the town, near the shore; but little progress, if any, has been made in building them. The kirk lies back from the main street near the river; the town-hall, a part of which is used as the burgh and county prison, is in the main street; it was rebuilt about twenty years since. There are two dissenting places of worship.

The principal industry of the Nairnees is fishing. Considerable expense has been incurred some time since, in forming a harbour; but the great floods of 1829 almost ruined it, so that it is now only accessible to vessels of very small tonnage. The trade of the town, which never extended beyond the supply of a small district round, has been much injured by the ruin of the harbour. Nairn is the place of some resort as a bathing-place, and several villas have been erected in the neighbourhood. Some coal and lime are imported, and a number of boats are engaged in the her- ring fishery. The burgh and parish, which comprehends fields and returns over 1000 acres, contains 5679 inhabited houses and 3228 inhabitants; by that of 1831, 721 inhabited houses and 3266 inhabitants: 38 of the houses were assessed at 10l. a year value or upwards, and more than 60 were estimated to be worth 10l. a year or more. There is a weekly market: and six stated fairs are held in the year.

The burgh of Nairn belongs to the Inverness district of burghs, which comprehends Inverness, Fortrose, Forres, and Nairn. It is a market and returns office of the county. The number of councilors, as determined by act of 1815, is 9; the number of registered voters is above 60. The yearly revenue of the corporation is upwards of 140l.; the expenditure about 10l. more. The whole of the trades make but one corporation. The jurisdiction of the burgh magistrates has dwindled to the cognizance of petty cases.

Several Roman coins have been discovered at Nairn. (Carlisle, Top. Dict. of Scotland.)

Auldearn, a parish, the kirk of which is about two miles south of the coast of Nairn. This parish had, in 1831, 330 inhabited houses and 1818 inhabitants.

Nairnshire is united under one sheriff with Elginshire, the sheriff, as in the other counties of Scotland, is a paid legal functionary or judge, with extensive jurisdiction in civil and criminal cases. (MacColloch's Statistical Account of the British Empire.)

There is little crime in the county, and that little is decreasing, from greater decision in enforcing the laws against smuggling, and from the growth of self-respect, the result of the increased civilization of the people. Petty assaults and other breaches of the peace, almost all arising from drunkenness, are the most common offences. Drunkenness is however diminishing; but the condition of the people is now much depressed. Most of the adults are able to read, and the men can generally write. (Second Report of Inspectors of Prisons.)

There is much suffering among the people from poverty: in Nairn parish, in 1836, 800 persons were on the poor-roll. The condition of the single-bodied sinner has however improved. There is a savings' bank near Nairn. Potatoes and herrings form a considerable portion of the food of the poorer classes.

The three parishes which are wholly within the county, and two of which are partly within it, are in the presbytery of Nairn; the remainder of those which are partly in the county are severally in the presbyteries of Inverness, Forres, and Dingwall. The presbytery of Dingwall is in the synod of Ross; the other presbyteries are in the Synod of Moray.

For parliamentary purposes the county is united with that of Elgin: the two return one member. Before the Reform Act, Nairnshire returned a member alternately with Cromartyshire.

This county was formerly included in the district of Moray. It contains some antiquities, of which the most interesting is Calder or Cawdor Castle, the antient seat of the thanes of Cawdor. In this building tradition has fixed no definite scene of the crimes of Cawdor's first murderer, who was buried very deep in bed which he was murdered is professedly shown; but the tower, which alone remains of the old castle, and to which is attached a more modern building, is obviously of later date than the transaction connected with it. In the parish of Nairn is the old castle of Caithlam, i.e. Finlay's Castle; and at no great distance are the remains of the castle of Rait, the seat of the Cummins. Below this castle there is a place called Knock-Gillan or Knock-Gillian, i.e. hill of young men were killed.' It takes its name from the slaughter, by the Cummins, of eighteen of the clan MacIntosh with whom they had a feud.

In the year 1645 the low country, the people of which favoured the Covenanters as was reprobated by Montrose, who destroyed the fishermen's boats and nets. The Covenanters, under General Hurry or Urry, attacked him at Auldearn.
near Nairn, but were beaten with the loss of 2000 men. Montrose burnt the towns of Elgin and Nairn.

In the Rebellion of 1745-46 the royal army in pursuit of the Pretender's forces crossed the county. The battle of Culloden was fought just beyond the boundary, in the county of Inverness. (Playfair's Description of Scotland; Beauties of Scotland; MacCulloch's Statistical Account of the British Empire; Municipal and Boundary Commissioners' Reports and other Parliamentary Papers; Carlisle's Top. Dict. of Scotland.)

NAKED SEEDS. This name was applied by Linnaeus to a small form of fruit which does not directly bear a style at the apex, and which has the appearance of a seed, as in the Sage, the Dead-nettle, the Borage, &c.: such fruits are not only borne by many naked-seeded plants, but are strictly so named are seeds which are fertilised by immediate contact with pollen, and which have no pericarp covering: they are at present known only in the great class of Gymnosperms, that is to say, in Conifers, Cytisaceae, &c., and in which the tubes sometimes happens that seeds burst through their pericarp, after the influence of the pollen has been communicated to them, and long before their maturation, as in Leontice thalictroides. In such cases they are, strictly speaking, naked, but not in the sense in which botanically types of the increasing happiness in store for them.

Though of amiable disposition and possessed of a fund of good sense and philosophy, Nakhimov had many singularities, and was at times morbidly shy even among his most intimate associates as well as to the public. Another thing in his character was his singular difference of his own literary talents, notwithstanding that his favourite subjects, and those in which he best succeeded, were of a satirical cast. This turn for caustic observation displays itself also in his "Fables," which are almost that of his epigrammatic point. Besides his satires in verse, he wrote many pieces in prose that partake more or less of the same spirit, more particularly that entitled "The Speaking Monkeys," which was composed in derision of the attempted conquest of Russia by Napoleon, and which may challenge comparison with Voltaire's "Pourquoi pas?" A short memoir of him, with a critical notice of his chief productions, was published at St. Petersburg in 1816, by Dr. Maslovitch.

NAM. [Nama].

NAMES. [Namur]. NAMES, PROPER, are words by which single objects are denoted, as countries, rivers, towns, men, &c.

But when we speak of proper names, we mean, more usually, the names of individuals, and to these little attention has hitherto been paid, and especially much proper names as appear among ourselves, it is our intention to offer a few observations.

In the primitive state of society, as soon as men were so far advanced as to have the capacity of distinguishing the denotation of the individuals who composed a tribe, the rule would undoubtedly be, 'one man, one word': we see this to be the case in the uncivilized tribes; and as man is presented to us in very early historic periods, we still see the same system prevailing. In the Hebrew genealogies, which ascend much higher than any which possess the slightest claim to currency in any other nation, we find a single word, as Terah, Abraham, Reuben, Aaron, David, Solomon, the only designation of the persons whom those words call up before us; and if in any instances there is any deviation from the rule, it is for some special reason, and we see it to be an exception to what was the usual practice.

In the other nations, the fathers of European civilization, it was the same, Egypt, Syria, Persia, and Greece; one person was in many cases represented by one word, and so in the Latin nation, we have rarely more than one word to denote one individual, or if there is a second word employed, it bespeaks an origin in something which is apart from the simple, colloquial, and usual designation of his name.

In the Celtic and German nations it appears to have been the same; Arminius, Arvicius, and the like: and in Britain, Caractacus. The Saxons were a nation in whose' province, there was, of necessity, the primary, and still prevalent, not only when the first establishment, but in the period when the descendants of Hengist held the supreme authority in this island. Persons do, to be sure, present themselves in the pages of historians with such additions as Har(t)foot, Ironside, but it may be reasonably doubted of some other particular strings in the Germanic English family, and if it is admitted that they may be such, still these are only exceptions, the great mass of the Saxon population, of whatever rank, having but one single word by which the individual was denoted, such as Edwin, Alfred, Gurth, Utfrid, and their like.

As nations advanced in refinement, the names of the individuals comprising became more complex. Amongst the Romans, for instance, we have Publicius Cornelius Bcelio Afrorum, Caius Julius Caesar, Publius Ovidius Naso; a variety of names these, but such as are confined to that period which were free. The slaves probably remained with the single word only.

We have not room to enter into an examination of the principle on which this new form of personal denomination was constructed. A uniform principle, like that very plausi- ble one on which our own personal nomenclature is at present constructed, perhaps did not exist, so that our present system is rather to be regarded as the invention of modern times, that is to say, the modifications by which they are derived from any of the many nations of more antient civilization.

The principle of the modern system of personal nomenclature in our own nation is this: to have one name for the individual, joined to a second name, which is common to some particular strings in the Germanic English family to which he belongs. We call the two the name and the surname. We think in these days much more of the latter than of the former. But in the more solemn acts of our lives, we find the proper consequence given to that which is indeed the more essential element in the personal name; namely, the name at marriage, when the name is the thing in question, it is that which is properly the name, and not the surname, which is pronounced; John, Richard, Anne. We may find in books, even down to the close of the seventeenth century, which catalogue the individuals by the name of the county in which they were born, that the names, and not the surnames, are arranged in alphabetical order. Philip's "Theatre Posthumus" presents a late instance.

The value of this principle lies here: that it is a simple and easy mode of showing to some extent, to what family, and individual belongs; it promotes family union; but its chief advantage lies in the facilities which it affords for conducting inquiries into the condition of the ancestors of persons who may feel any curiosity on the subject, which, but for the enumerations of each individual, are inconceivably difficult. An unchangeable surname having never been adopted by them. In this respect the house of Brunswick is like the houses of Sax, Nasse, Bourbon, Orleans, and a few others, springing from the persons who were of prime note in that family. A period when the rules for such inquiries were for the first time, and that of the Tuscan Duchy of Lorraine, being afterwards too conspicuous by rank and station to need any such ordinary mode of distinction as that which the adoption of an invariable addition to the name would have given them. This was once not peculiar to the royal house of England; in this island (the Stuarts, it may be observed, and perhaps the Tudors, but not the Plantagenets, were a temporary exception, being families of inferior rank, who were raised by circumstances to the possession of the
For the first two or three centuries, seem also to have discarded a practice which assimilated them too nearly to the classes next below them. Thus the persons distinguished in Domesday Book as Comites, are Comos Hugo, Comos Rogers; and never, we believe, with names of addition which descended to their posterity. But all these great houses have become long ago extinct.

There is also an exception to the modern rule, of another kind. The nobility of the Cistercian order, cultivated districts, in which the inhabitants are better known by some

name, as of the house in which they live, or as the son of some person well-known, than by any unvarying addition to a heraldic name. There are, however, such (or least very lately) to be the case in some parts of Yorkshire and Lancashire, and it is certainly the case in parts of Wales, but it is probable that the extension of education will bring all parts of this island into subjugation to a plan which has such effects.

If it is inquired when the system on which we now proceed was first adopted, the fact which has just been stated, that even now the system is not universally prevalent, will show, what is indeed the fact, that, like many other things, it has not had a place in the lives of the ignorant people, an instance before the Conquest of persons in genealogical success

sion bearing the same surname; and it is also quite certain that in the mass of the population of England after the Conquest, the descendants of the Saxons population, there cannot be an instance setting down any individual of the same surname being distinguished by the same surname in the two centuries immediately succeeding the Conquest. We have indeed but imperfect means of pursuing the inquiry for these two centuries. The names of the inhabitants of this country at this period, in extracts of such records and chartularies. But if there are exceptions, and Saxons in these centuries to be traced using an

variable as well as a variable name, it is in that remarkable class who still exist in any very small number, who have

one of the old Saxons, or assimilated to the place of the sur

name, such as Thorold, Sewane, Aldred, Thoroughgood

(Total), Godwin, and the like.

But we find in Domesday Book that several of the Nor

man and Continental, who became 

settled in England at the Conquest, and soon after that event, are distinguished by names of addition, which are not

merely personal, but names which were borne by themselves and their posterity after them. Such are Darcy, Arnulde, Desnaur, Balbyck, Eustace, Lacy, P. Not, with others, people just below the rank of the comites, and who, gaining great possessions and great power, were afterwards very conspicuous in English history. These are the persons, we conceive, who first set the example of the practice which has since become the general practice of us.

The disposition which always more or less exists to imitation what is done by a superior, is probably the principle to which we are to refer the change in this point which we find have taken place by the middle of the fourteenth century also of propagation.

By that time the present system may be said to have been

mostly generally established in all the well-settled portions of the island. The statute of additions of the 1st Henry V., by requiring that the name and description of the party

should be set forth in any writ or inquisitions should do something to consolidate the system: and when it was required that in all parishes a register should be kept of baptisms, marriages, and burials, which was one of the acts of the statute of additions, it may be seen presented to any attempts at relaxation in the practice.

But even at the beginning of the fifteenth century there was much that was unsettled in the personal nomenclature of England even in families to whom pertained portions of the same and in some cases of great consequence. Thus, filius Adam Emmenton, who in 1416 is William Emmenton; and more remarkably about the same time, a person who is described as Johannes filius Williemi filii Johannis de Hunshevel appears soon after as Johannes Wilson. About the same time we had Willielmus Johnn Willikin, Wil

helmus Adamson Magotson, and Thomas Hensim Magot, showing the present system then in its rudiments.

As the system at present existing made its way by degrees, and with much of casuistry, so the tendency to have the name in respect of the name of addition which marked the distinction of the stripe. There are some of the surnames in common use among us for the

adoption of which it is difficult now to assign any satisfac

tory reason. This is partly to be attributed to the corrup
tion which many names have undergone, and partly to the strange additions which have been made to place of surnames in early documents of undoubted authenticity. One of these is Adam that God made, whose addition, if he lived at the period when his race first began to conform themselves to the system, would appear now in some form which would mean the name of the house or family. Sometimes there is a difficulty arising out of a wrong apprehension of the origin. Thus we have the names Spring, Summer, Winter, there is no Autumn. It is difficult to determine how the names of the seasons should be pronounced in the names of families, if in fact it is a word denoting a small grove of trees, so that the name classes with Wood, Holt, and others concerning which there is no difficulty; while Summer and Winter are Summoner and Winter, names derived from occupations.

But the great mass of our nomenclature is easily

explained. We cannot enter here at large into the subject; but it may be useful to those who are inclined to prosecute it, to say that nearly the whole of them may be referred to one of the five following:

1. Foreign names brought in by settlers from other countries, including the Scotch and Irish names. These designate a very large section of the whole population; and there is a constant accession being made to them by the tide of immigration. Thus the addition of names, which is the name of this class introduced in the early periods, was the great majority being of families who have become settled in England in the course of the last century and a half.

2. Names of locality.—These are divisible into two great portions: those who were undoubtedly the name of the place, and their additions, and those who were derived from some specific place, as Atherton, Burton, Denby, and thousands of others. There being scarcely a town, village, or hamlet which has not given its name to some English family.

3. Names of occupation.—Of this class the number is very great. We have the names of families, as Barber, Smith, Mason, in short every trade and every other occupation in which men engage. Lost trades or trades which have changed their names are preserved in the names of families whose ancestor was engaged in them at the time when his family fell into the system. Thus we have Fletcher, Girdler, Par

ischer, Stringfellow, Lister, Walker, Pargier, Webster, 

Tawerner, and the like. We have also Pulliser, Lander,

Poner, Pulfreman, Page, Woodruffe, Reese, Hunter, which were evidently at the beginning names of occupation. It is not difficult to account for such names as Bishop, Baron, Earl, Lord, Priest, King.

4. A large portion of our personal nomenclature is made up of surnames which are formed upon those which we call

Christian names. Nearly all these appeared originally in the form of Filus, &c., as John son of William. This mode of designation has taken various forms. Thus on this name of William, there are founded Williams, Williamson, Wilks, Wilson, Wilke, Wilkinson, Willis, Wil

l, Bill, Bilten, Willot, Wilmot, Will, Tilly, Tiltot, Tilsom, Tiltolom, Willy, each of which, if written by a scribe of the middle ages in Latin, would be expressed by the same phrase, Filus Wilhelmi. Other names have an equally numerous progeny. To this class may be referred John, and Jeanet; John; and canon, John; Johnstone, Johnston; and canon, Wrightson, which are names formed not indeed on the name, but the profession of the parents.

It would however be to extend this article to an inordinate length, even to touch upon the subordinate classes to which the great classes have been added.

5. The fifth and last is that of names which indicate something peculiar in the personal appearance or mental qualities of the person to whom they are first given. Such are Swift, Long, White, Black, Crump, Rowe, Wise, Good, etc.

Of the proportions in which the names of the five classes enter into the composition of English society, some idea may be formed by the following analysis of 896 names, which are recorded in what we believe to have been the inhabitants of Bath. Throwing out 162 as of uncertain origin, there remained 734 surnames, which give the following results:
1. Foreign names, 142.
4. Patronymical, 172, of which 43 were Saxon names.
5. Descriptive, 33.

The results would be somewhat different in a population of a different kind. There are six families who have names of occupation in the English population. The number of the individuals bearing the names varies greatly in the five classes. The ratio of the number of persons bearing the name to the name itself is the lowest in the first and second classes.

The nations who contributed the 142 foreign names were these:—

Sco, 44 German, 9 Italian, 2 Pole, 1 French, 39 Dutch, 6 Portuguese, 2 Irish, 32 Welsh, 5 Cornish, 2

Thus much for the surname.

The names of the ancient Saxon population of England were nearly all descriptive of some quality of mind or body. Thus we have:—Winfred, win-peace; Alfred, all-peace; Edmund, truth-mouth; Ailwine, of all beloved; Ulf, wolf. But a great change took place soon after the Conquest. We see in the names of the Normans who were brought into England in 1066, a large number which are not among the favourite names of the English nation: Roger, Ralph, Hugh, Humphrey, Geoffrey, Gilbert. To them also we owe the introduction amongst us of names of religion. If these names existed at all in England before the Conquest, they were exceedingly rare. In the course of one or two centuries not one occurs. Even amongst the first rate of Normans they did not abound. We find Adam, John, Stephen, David, Peter, Matthew, and perhaps a few others. But in the century and a half after that event, names of this class began to be prevalent in a great degree. It was a period of extraordinary Christian devotion: the exertions in founding monasteries, building churches, and maintaining the war against the infidels show it. In this state of the public mind the new system of taking names of religion spread and strengthened. The names of religion were almost wholly from the Old and New Testament, a few only being taken from the names of persons who have been eminent in later times for their Christian virtues.

Since then little change has taken place. A few names once common have lost their popularity; a few others have been introduced. There have been periods when names somewhat fantastic have had a popularity; such as the names of the virtues, as Pattern, Truth, Prudence, Faith, by which some have been named. Sabbath, and others more extraordinary, have been given to men. Some went for a time into another extreme, and we had Hannibal, Scipio, Caesar, and Hercules.

We have however not been sufficiently attentive to the importance of keeping up a stock of what we call Christian names. Our population has increased to a very great extent, while our surnames have rather diminished than the contrary. We should therefore, if we wish that names should be what they are intended to be, notolame, increase the number of those names out of which we have the power ourselves of selection. As it is, with a population of 20 or 30 millions, we have but 53 names of men which can be used without some appearance of singularity. Of these 12 are more properly use in one-half, and they are all taken from the Scriptures.

Again, looking at the 53 names in respect of the languages from which they are derived, it appears that

23 are of Hebrew origin,
19 from the various dialects of Western Europe,
5 from the Greek, and
4 from the Latin.

There are a multitude of names, once in use in England, which might easily be revived, and it would be a matter of some public convenience to do so. Few persons have found inconvenience in some form or other from the want of sufficient distinctness in the name he bears. Thus a little time ago there were two antiquarian Chalmers'; two Parkes upon the bench; two Whitakers, both clergymen, and with both surnames on Lancashire topography: some time ago there were two Dr. John Thomas's, both chaplains to the king, and both bishops; and two Dr. Grays, both divines, both writers in their own profession, both connected with historic literature and poetry, and both engaged in controversies with Warburton. This occasioned confusion.

To change a surname is a difficult and expensive process; the cheapest and simplest remedy is to give a name at baptism which will be marked and remembered, as B. wald Hall. Of neglected names there are, Austin, Alan, Aubrey, Barlow, Blais, Barnard, Barmby, Barnard, Basket, Bank, Miles, Syneysele, Theobald, Theodore, and a host of others. But it might be worth the consideration of government, whether some facilities should not be afforded for increasing our very scanty stock of surnames by the revival of many of the names of Christian Science, and lost in persons who descend from those who bore them.

NAMUR, the French name for NAMEN, a province of the kingdom of Belgium, bounded on the north by Brabant, on the north-east by East Flanders, and on the south by Flanders (province of Ardenne), and on the east by Hainault. Its greatest length from north to south is 55 English miles, and its greatest breadth 42 miles; its area is 366,181 hectares, equal to 904,467 English acres, or 1413 square miles. It is employed

In cultivation
181,386 hectares.

Marshes and waste land
48,343

Woods and forests
125,541

Sites of buildings
1,277

Roads and streets
7,232

Rivers and streams
1,862

Undescribed
533

366,181 hectares.

The province is watered by the Meuse, the Sambre, the Lesse, and several small streams, by which it is traversed in all directions. The Maas enters Namur from France, near the town of Givet, and runs north-north-east about 9 miles to Dinant, when it flows to the north-north-west for 17 miles of the city of Namur, and turning to the east-north-east enters the province of Liège at the distance of six miles from Namur. The Sambre enters the province from Hainault about 10 miles east of Namur, at which city it falls into the Meas. The Lesse enters Namur from Luxembourg at St. Paulin, and flowing first to the north, and then to the east-north, falls into the Meas a short distance south of Dinant.

The soil of the province is generally fertile, consisting for the most part of an unctuous soil, but without any great depth. Of the three arable provinces or districts in which the province is divided, viz. Namur, Dinant, and Philippeville, that of Namur is the most productive, the other two being more stony. The principal agricultural products are wheats, rye, oats, barley, hemp, flax, and chicory. The grain harvests do not more than suffice for the consumption of the province. There are few natural meadows in the district of Namur, but in the other parts of the province the meadows are the most profitable of the lands. Artificial meadows and parks are much more than the regular meadows of the province, and the district of Namur. Wood grows abundantly in the province. The trees are principally oak (the bark of which forms an article of export), beech, ash, hornbeam, birch, and haseil. With the exception of the oak trees, which are used for building purposes, the wood is generally cut for fuel and charcoal for the use of smelting furnaces. A great many plantations have been made of late years, especially on places where, through a want of depth in the soil, its cultivation cannot be profitably conducted. The breeding of draught horses forms an important branch of occupa-
tion; they are at once strong and active, and the farmers are careful to preserve the breed unmixed. Great numbers of swine are bred, and are mostly sold to itinerant dealers. Near to Dinant some are killed annually for exportation. The farmers occasionally suffer from the visits of wolves, and there are great numbers of foxes, rats, weasels, and polecats.
The mineral productions of the province are iron, lead, coal, marble, and potters' clay. The quantity of iron made in the course of a year is stated to be 30,250 tons, nearly the whole of which is smelted with wood charcoal, requiring yearly the produce of 76,000 acres of woodland. The iron smelting has been inconsiderable in 1838, £29,665. The said quantity is exported from Namur, the town where it is smelted, and exported to the following towns and places:—

<table>
<thead>
<tr>
<th>Town</th>
<th>Quantity exported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namur</td>
<td>£29,665</td>
</tr>
</tbody>
</table>

The province of Namur contains only five towns, Namur, Ardenne, Dinant, Fosse, and Philippeville. With the exception of the capital, they are all inconsiderable places. Ardenne is situated on the right bank of the Meuse, and was, in 1814, when all Namur was captured, defended by the French to the last extremity.

The town is composed of ten wide well-paved streets. The population of the province, on January 1, 1838, was 229,665. The movement of the population during 1837 was as follows:

<table>
<thead>
<tr>
<th>In town</th>
<th>Out of town</th>
</tr>
</thead>
<tbody>
<tr>
<td>567</td>
<td>622</td>
</tr>
</tbody>
</table>

NANCY, or NANCY, an important town of France, capital of the department of Meurthe, situated on the left bank of the Meurthe, 172 miles east of Paris in a direct line, or 206 miles by the road through Epernay, Châlons, Meuse, Bar-le-Duc; in 48° 41' N. lat. and 6° 12' E. long.

Nancy is not known to have existed before the twelfth century. In the middle ages it was the capital of Lorraine, and was several times taken and retaken, especially in the struggle in which René II., duke of Lorraine, had to engage with Charles le Temeraire, duke of Burgundy (Bonhomme), for the possession of his duchy. It was under the walls of this town (Jan., 1477) that Charles experienced his last fatal defeat, in which he fell. In the reign of Louis XIII. (a.d. 1610) it was taken by that prince from Charles III. or IV., the then reigning duke of Lorraine. The fortifications were demolished on the restoration of the town to the dukes of Lorraine.

The town is situated in a fertile and pleasant plain at the foot of wooded and vine-covered hills. It consists of two parts, the old town of the north and the new town on the south. The old town retains some portions of the old fortifications: the streets are narrow and crooked. The new town, commenced in the beginning of the seventeenth century, was wide and bright streets, lined with good houses: the staliness of its public buildings, and the extent and beauty of its squares and public walks, render Nancy one of the handsomest, though it is one of the dullest, of the great towns of France. La Place Royale is the finest of the town square; it is enclosed by the palace of the prince, a large public building, and by the church of Saint George, a magnificent edifice with a dome, standing in the middle of the square. The palace was formerly the seat of the French kings of the house of Bourbon, and is now the residence of the king of France.

The cathedral is remarkable for the number of its fine buildings: it is a fine church of modern architecture; the front is ornamented with two large towers, a high altar, and a fine collection of statues. The church, moreover, bears several statues of white marble. On either side of the great altar are fine statues in Carrara marble, representing St. Peter and St. Paul. This building was begun in 1540, and finished in 1677.

The situation of the town, at the confluence of two navigable rivers, is favourable to commerce. The two chief branches of industry are the manufacture of cutlery and mining. Great numbers of workmen are employed in the neighbouring collieries, marble-quarries, and mines of iron and lead. There are four cattle-fairs held in the year, in February, May, July, and November. The fair begins the 2nd of July, and lasts fifteen days.

The castle of Namur is said to have been built at the end of the sixth century, and in the years 1840, when the castle was made a fortress, it was made seven times larger. Early in the eleventh century, under the reigns of Albert I. and II., it was much enlarged, and by the beginning of the fifteenth century Namur had attained its present dimensions.

This fortress has sustained several sieges, the most celebrated of which was successfully undertaken by Louis XIV., assisted by the renowned Vauban, in 1692. The French maintained themselves for three years in the fortress, to the defence of which they made several additions.

On the 3rd July, 1695, the town was invested by the English under William III. The garrison, under the Marshal de Boufflers, consisted of 14,000 men, but the attack was so fierce, that the marshal capitulated on the 4th of August. Namur was unsuccessfully attacked by the court of Nassau in 1704; it was ceded to Austria, in 1713, and put under the care of Holland in 1715. In 1746 it was taken by France, but was restored to Austria, under the treaty of Aix-la-Chapelle, in 1748. The fortifications were strengthened by Joseph II. in 1754, but were afterwards restored. It was taken by the French in 1792, retaken by the Austrians in the following year, and falling again into the hands of France in 1794, was constituted the capital of the department of the Sambre and Meuse, and so continued afterwards. It was the seat of the French government in 1815.

Namur was the scene of an obstinate battle in 1815, between the French and Prussians.

The population of the city, on January 1, 1838, was 22,549.
A small portion of gold is found, and tin in considerable quantities. According to a census taken in 1829, the population amounted to 3438, probably males, as it is added that 1800 were capable of bearing arms. They are Malays, profess the Mohammedan faith, and live in villages. of the largest of Lorraine or members of their family, a marble altar on which is a sculpture of Christ in his grave-clothes, and other ornaments. The remains of several of the princes of Lorraine lie in the vault beneath.

Three Churches of Nancy, in 1826, was 29,122 for the commune; in 1831 it was 29,001 for the town, and 29,783 for the whole commune; in 1838 it was 31,445 for the commune. The inhabitants manufacture hosiery, hats, and gloves; and embroidery. This latter branch of industry employed many hands; the embroidery is sent to Paris and to the colonies. They spin cotton yarn by the agency of steam; and make coarse woollen cloth, calico, muslin, and other cotton goods. Some chemical preparations in 1831. Mr. R. Day, chemist, liquors, plant stains, and hangings, and earthenware. There are several establishments in the town or neighbourhood for spinning woollen-yarn and weaving muslin and calico; besides tan-mills, tannary, dye-houses, breweries, and oil-presses. There is near the town a large bed of stone well adapted for graphic printing. Trade is carried on in the various manufactured articles; and in grain, wine, brandy, wool, and iron.

There are two yearly fairs, one of twenty days.

Nancy is the seat of a bishop, whose diocese comprehends the departments of Meurthe, and Moselle; and is the See of the archbishop of Boulogne; of a Cour Royale, whose jurisdiction comprehends the departments of Meurthe, Meuse, and Vosges; of a subordinate court of justice and a commercial tribunal; and of several fiscal or administrative government offices for several hospitals and charitable institutions, and a house of correction.

There is a public library of 23,000 volumes; and there are libraries attached to the bishopric, the Cour Royale, and the high school. There are a rich museum, a cabinet of natural history; a botanic garden, a bistorium, or a high school, and a seminary for the priesthood; a school of design, and a secondary school of medicine; a central agricultural society, a royal society of sciences and arts, an educational Protestant society, and a society formed by the wealthier Jews of the department for the instruction of the poor children of their nation in the useful arts.

Nancy was the native town of Marshal Bassompierre, of Madame Lorraine the painter, of Calmet the Benedictine, and other eminent men.

The arrondissement of Nancy has an area of 551 square miles, and contains 187 communes; the population, in 1831, was 127,944; in 1838 it was 129,941.

NANING. Mr. Gray’s name for a genus consisting of the phanerocellular species of Helix, with large umbilici, included in the subgenus Helicella of De Férussac. The animal was first discovered and figured by General Hardwicke in 1829. Mr. Reeve enumerates and enumerates the species in the ‘Zoological Proceedings for 1834.’

NANING is the name of a country which up to 1832 was possessed by a Malay chief, who was tributary to the British. It is now annexed to that province, the chief having risen in rebellion against the East Indian government. It lies at the back of the other territories, and separates them from the small kingdoms of Rombawa and Johole. It extends north and south about 40 miles, and an average breadth of 10 miles, which gives an area of 400 square miles, or nearly the extent of the county of Bedford. The surface is undulating, interspersed with high knolls thickly clothed with jungle; the hollows or flats between the undulations, where the water lodges, are from 2 to 3. In some parts of it are heavy forest or sandy grounds, and either form a swamp or sandy ground. The soil on the high grounds is red and generally gravelly; on the flats it is soft and whitish. Water is plentiful, and many of the streams flow over the surface, on the slopes of the rising grounds. The crops grown in the country are rice, timber, and fruits; pepper and gamboge are cultivated. Among the fruits are mangosteens, pine-apples, jack-trees, and many other kinds. There are forty-five species of trees in the jungle, of which the fruit is edible.

None of the buildings of Nankin are distinguished by their architecture, except some of the gates, and the famous Porcelain tower, which is attached to one of the pagodas or temples. This building is octagonal, and of a considerable height in proportion to its base, the height being more than 200 feet, while each side of the base measures only 40 feet. The roof consists of nine, or sixty-four, small square roofs, each in a single floor, which is somewhat higher than the rest. Each story consists of one saloon, with painted ceilings; inside along the walls statues are placed. Nearly the whole of the interior is gilded. The material of the wall seems to be a mixture of wood, paper and white stone, made of a fine clay, susceptible of impressions, as the figures which appear on them. On the outer side of the wall they are white, and, according to Ellis, are merely the white bricks frequently used in China. At the termination of
any story, a roof built in the Chinese fashion projects some feet on the outside, and under it is a passage round the tower. At the projecting corners of these roofs small bells are fastened, which sound with the slightest breeze.

On the summit of the tower is an ornament in the form of the finch of a tree: it is said to be of gold, but probably a gilt; it rests immediately upon a pinnacle, with several pairs of steps, forming La Tour de Nesle, a state house of the thirteenth century, being situated in the most populous part of the empire. Though the ports of Soo-cheou-foo and Shang-hai it means great quantities of corn and other articles. They are brought by water to Nankin, as there are several canals which connect the town with the sea, forming La Tour de Nesle, a state house of the thirteenth century, being situated in the most populous part of the empire.

the Halde's History of China; Ellis's Journal of the late Embassy to China.)

NANNI, GIOVANNI, called Giovanni di Udine, was born at Udine, in 1490. He studied first in the school of Giorgiones, and afterwards passed to that of Raphael, under whom he executed the two greater part of the stuccoes and grotesque ornaments in the antechambers of the Vatican. He is considered as the most eminent in this branch of the art. His bosoms, plants, and fatiche, his aviaris, with birds of every description, are so true and natural in their attitudes, that one cannot believe that they are not living. The work which was made in Italy, and some of his works are at Florence, Genoa, and Udine. He died in 1464, at the age of 70. Vasari frequently calls him 'Ricasimori.'

NANTES, a town in France, capital of the department of Loire Inférieure, situated on the north bank of the Loire, in 47° 13' N. lat. and 1° 34' W. long.; 209 miles from Paris in a direct line west-south-west, or 231 miles by the road through Versailles, Chartres, Le Mans, and Angers.

Nantes is a very ancient town: it is mentioned by Pliny as the capital of the Nantennes, a Celtic people, under the name of Condivicmus, a name which was superseded about the time of the conquest of Gaul, two centuries after the Nantennes, whence the modern Nantes. In the ninth and tenth centuries it was six times pillaged and burnt by the Northmen, and continued desolate for thirty years. In A.D. 1598 Henri IV., who had come to Brittany to appease the troubles of the country, was welcomed on his arrival by a reception which was made to him. Madame La Roche Jacquet estimates the number of those who were drowned on the spot or died in prison at 25,000.

The old town of Nantes was almost entirely comprehended in the angle formed by the north bank of the Loire and the east bank of the Erdre, and was almost to deceive the eye by the closeness of the imitation. After the sack of Rome, the town on which the suburb of Le Marchys is situated. The suburbs of St. Clement and St. Baud are east of the town in the angle of the Erdre and the Loire, the latter extending along the bank of the Loire. The suburb of Les Ponts (the bridges) comprehends the Island of the Loire opposite the town, across which islands a chain of bridges and causeways communicates with the suburbs of La Roche Jaques, on the south side of the river. The suburban walls are sometimes 700 feet high, and some of them have risen in ordinary times is only about 5 feet; and in winter it is imperceptible, being then counteracted.
by the force of the stream. Vessels of 200 tons come up
to Nantes at spring-tides; at other times only vessels of
100 tons or less can get up. Larger vessels either remain at
Paimboeuf, or move lower down, or at least discharge
part of their cargo there. The quays at Nantes extend
along the river side from the eastern extremity of the
suburb Richelbourg to the western or lower extremity
of the quarter of La Possee.

All round the Île Feydeau and in one
part of the Île Gloriette, and along the bank of the Erdre,
which expands into a fine sheet of water, resembling a lake,
with its banks adorned with country-houses: it is navigable
to Nort. 12 or 13 miles above Nantes. The merchant
of Nantes, for the punctual fulfilment of their commercial engagements: they were formerly ex-
tensively engaged in the slave-trade; and during the last
general war a hundred privateers were fitted out here.
The manufactures of Nantes include coarse and
coast cloth and flannel, calico, handkerchiefs, fustian,
bed ticking, and other cotton or linen fabrics. There are
copper-founderies, and iron-works for making chain-cables,
casting cannon, and furnishing other articles for the equip-
ment of vessels; ship-building and other small ships of war are built
and ropewalks; breweries, brandy-distilleries, vinegar-yards, refining-houses
for colonial and beet-root sugar, a glass-house for bottles,
tan-yards, currying establishments, &c. Pottery, tobacco-
pipes, buttons, boots, shoes, and books, and books, and
and books are also made. There is a victualling establishment for
the navy, from which Brest, Lorient, and Rochefort are
supplied. Provisions are very cheap. The trade of the
port is not limited to any particular part of the world:
there are many nations of export and import, and the
ship-biscuit, butter, dried pulse, hides, morocco leather,
timber, agricultural implements, Spanish and Portuguese
wine, liqueurs, colonial produce, and French manufactures.
Vessels are fitted out for the Newfoundland cod-fishing,
and the West Indian trade, and the slave-trade, or slave-trade, is actively
on. The navigation of the river facilitates commu-
nication with the interior of France, and the dangerous
navigation of one part of the coast is superseded by the
canal from Nantes to Brest, and the road from the salt-pans
of the land, and the café of Lonniomier and Le Croisic in great part
conveyed into the interior by Nantes. There are two
weekly markets and twelve yearly fairs.

Nantes is the seat of a bishopric, the foundation of
which dates back to the third century: the diocese
comprehends the department of Loire-Inférieure: the
bishop is a suffragan of the archbishop of Tours. It is also
the seat of a Lutheran consistory. There are nine churches,
six nunneries, and four hospitals. There are a subordinate
court for the commercial, civil, and criminal cases, a custom-house,
and a mint, and a variety of other fiscal or administrative go-
vernment offices. There are a high school, two seminaries
for the priesthood, a school of design, a free school for
navigation, a secondary medical school, and one or two
courses of lectures. Besides the library of 200
volumes, there are a library at the episcopal palace, museums
of paintings, natural history, and physical science, a botanical
garden, an observatory, public baths, and a theatre. There
are various societies for literary and charitable purposes.

The arrondissement of Nantes has an area of 685 square
miles, and comprehends sixty-six communes: the population,
in 1831, was 265,627; in 1836 it was 203,892.

NANTUA, [Aisne.]

NANTUCKET BAY. [Massachusetts.]

NANTWICH, or NAMPTWICH, a market-town in the
hundred of Nantwich, in Cheshire, on the river Weaver,
192 miles from London on the road through Lichfield and
Stafford to Chester. The first part of the name is said
to be derived from the district, a British district, a British
British; the second part is Anglo-Saxon corruption of the Roman riva;
and though locally assumed to be the
appropriate designation of a salt-work, is in reality a
general designation of a group of industries whether in town or
country. The termination wick or wick, for it is written
both ways, and is sometimes separate from the other part
of the name, is found in the names of places (e.g. Green-wick,
Wool-wick, Nor-wick, Ips-wick, Tark-wick, Alm-wick, &c.)
which have no peculiar connection with the manufacture of salt.
Nantwich is mentioned in ' Domesday' by the simple
designation Wich, and the salt-works are there mentioned.

It was then enclosed by the river Weaver on one side, and
by the other by a ditch. In 1069 Nantwich was the scene
of an unsuccessful attempt by the Cheshiremen to
resist the advance of the Normans under Hugh Lupus, earl of
Chester. It was afterwards made the head of a Norman
lordship, and the lords had a castle here, of which there are
no remains. In 1348 and 1383 the town suffered con-
siderable from fire. The damage in the former was to
the value of 36,000L.

In the civil war of Charles I. the
town was occupied by the Parliamentarians, from whom it
was taken by Lord Grandison just before the battle of
Edge Hill. Sir William Breerton, the parliamentary general,
was victorious; the town was very frequently burnt during the war.

It was besieged (January, 1643-44) by a party
of the king's troops, partly Irish, under Lord Byron;
but though defended only by works hastily raised round the
town, was gallantly held by the townspeople and others under
the town of Bootle; and the siege was terminated
by the collapse of the town, and the destruction
of the town, and the destruction
of the town by Sir Thomas Fairfax and Sir William
Breerton.

The town is in a low flat
site, on the right or east
bank of the Weaver. It is irregularly laid out, and consists
of the townships of Alnwick, Whitchurch, Northwich, Wootton, and
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leaving any residue. This substance is colourless, inodorous, and insipid. It fuses when heated, and on cooling becomes a fibrous mass. When strongly heated it boils, emitting vapour, which condenses in crystalline plates. It is nearly insoluble in cold water, but slightly soluble in hot; the solution deposits acicular crystals as it cools.

Chlorine does not act upon naphthaline; heated concentrated sulphuric acid dissolves it, but when cooled and diluted, crystals of naphthalamide are deposited. Dilute sulphuric acids do not act upon it; when boiled in a strong solution of potash, ammonia is disengaged; sulphuric acid separates the naphthalamide from the alkali.

According to M. Laurent this substance consists of:

NAPHTHALASE, a compound discovered by M. Laurent in 1826. It is prepared by mixing nitronaphthalin with about ten times its weight of lime, slightly moistened in a retort filled to the neck; when heat is applied, a brown oil is formed, containing much naphthalin, some ammonia and undecomposed naphthalin, and in the neck of the retort a thick oil is condensed which on evaporating becomes solid; this is separated by cutting off the neck of the retort, and when washed with ether, the foreign matter is dissolved and the naphthalase remains.

Its properties are, that it is pellucid, of a yellow colour, insalubrious in taste and smell, and nearly so in other. At 48° it begins to sublime but does not melt; at a higher temperature it fuses and boils; the vapour is of a yellow colour, and it condenses either in yellow scales or needles. A small quantity dissolved in cold sulphuric acid imparts to it a fine, deep, violet-blue colour, and water precipitates it unaltered.

According to Laurent, it consists of

M. Laurent considers it as nitronaphthalin minus an equivalent of hypninetric acid.

NAPHTHALIC ACID, a compound obtained by a very tedious and complicated process from naphthalin by Laurent. Its properties are, that it is cold, white, brilliant, and in long slender prisms, which are four-sided prisms; it considerably resembles benzonic acid. It melts at 221° and on cooling concretes into a fibrous mass, and when more strongly heated, it volatilizes without decomposition in a transparent white vapour which is readily condensable. This acid is devoid of smell, has little taste, is unaltered by exposure to the air, reddens moist litmus paper, is only slightly soluble in cold water, but dissolves to a considerable extent in hot water; alcohol and ether dissolve it readily. Chlorine has no action upon it, but hydrochloric, nitric, and sulphuric acid dissolve it while hot without decomposition.

According to M. Laurent, it consists of

NAPHTHALIN. [HYDROGEN—CARBURETS.]

NAPIER, JOHN, baron of Merchiston, was born at Merchiston Castle, near Edinburgh, in the year 1550, at which time his father was but sixteen years old. His lineage is traced from John de Napier, who, in 1296, swore allegiance to Edward I. Lord and Laird among his more immediate ancestors are mentioned William Napier, governor of the castle of Edinburgh, and Alexander Napier, vice admiral of Scotland. His father, Sir Archibald Napier, was master of the mint of Scotland. Napier was never raised to the peerage, as might be inferred from the writings of some authors, Briggs among others. (Letter to Archbishop Usher, vol. v., p. 422.) His name has been variously written. Besides the Latinized forms Neper and Neperius, he met with Napier, Neper, Naper, and Neperus. This last is the orthography adopted in the title-page of Wright's translation of the logarithmic canon, which work was revised by Napier himself the year before his death. The name at the head of this article appears to have been the family name, and certainly the only by which he is known.

Napier's matriculation into the university of St. Andrew took place in the year 1562-3, as appears from the books of the university. (See the 'Pursuit of Knowledge,' in the Library of Entertaining Knowledge, and the subsequently published Life of Napier, by David Napier, published at Edinburgh in 1834.) That it took place early also appears from the following passage in the preface to his 'Plain Discovery of the Revelation of Saint John,' published at Edinburgh in 1593, 4to. Speaking of the university, he says, 'in my tender years and in the age of my entrance into the university, having on the one part contracted a loving familiarity with a certain gentleman, a papist, and on the other part being attentive to the sermons of that worthy man of God, Master Christopher Goodman, teaching under the Apostle Paul, I was in admiration against the blindness of papists, that could not most evidently see their seven-biled citie of Rome pointed out there so lively by St. John as the mother of all spiritual whoredom: that not only boast but I wrote in continual reason against my papistical kinsmen, and the more I declared with myself, by the assurance of God's spirit, to employ my study and diligence to search out the remanent mysteries of that holy bookes, as to this hour, praised be the Lord, I have bin doing at all such times as I could with sufficiency. The plain discovery I have made to the publick is that, that the 'Plain Discovery' was to show that the doctrines of the popes were antichristian, which so accorded with the views of the French Huguenots, that a translation of the work, stated in the title-page to have been revised by Napier, appeared at Rochelle in 1609, the same year that the council of Trent, formerly declared the pope to be Antichrist. In the same work he saith he has determined the dates at which the completion of the prophecies will take place, and he assigns the destruction of the world to the year 1786.' We from the time of his entering the university to the publication of the above work, scarcely anything is known concerning him. His biographers, David Stewart, Earl of Buchan, and Walter Minto, about the close of the last century made inquiries among the descendants of Napier for letters or other documents which might throw light on his history during this long interval. Their exertions in this respect seem to have been attended with little success. MacKenzie, in his 'Lives and Characters of the most eminent Writers of the Scottish Nation,' published in 1708, put a line about the year 1566, and adds that his college residence had been too short to entitle him even to the degree of B.A. In 1571 he had returned to Scotland. In 1593 he was chosen by the General Assembly of the commissioners appointed to assemble at Edinburgh to counteract the attempts of the Roman Catholics to put aside Protestantism, then recently established. We are left to conjecture at what time prior to the year 1594 the mind of Napier first became occupied with the discovery of a method for avoiding the long and laborious arithmetical operations which the solution of the most simple trigonometrical problems then exacted. That he was thus occupied in the year 1594 is a probable letter written by Kepler to Gruuter, dated 1624, wherein speaking of discoveries in spherical trigonometry, which had then been published ten years, he says, 'Nihil autem supra Naperianam rationem esse puto: etsi quidem, Scotiam quidam, litteris ad Tychothem anno 1594 scriptis, jam sperm fecit canas illius...' (Keppler, Epist. Lipsia, 1718, fol. p. 460.) The Scotchman here alluded to was Dr. Craig, of whom a circumstance is related by Wood, in his 'Athene Oxonienses,' under the article 'Briggs,' upon the authority of Oughtred and Wingate, and cited by several others with similar information. The substance of this is:—Craig, coming out of Denmark, called on Napier at Merchiston,
and informed him, among other things, of a rumoured dis-
covery by Longomontanus, as 'a asi said,' whereby the tedi-
some operations of multiplication and division in astronomical and geometrical calculations, and the use of that invention, and the effects by means of proportional numbers, of which infor-
mation Napier availed himself so skilfully, that upon Craig repeating his visit a few weeks after, he showed him a draught of what he supposed to be the most magnificent invention. The nature of this story, as regards Longomontanus, is disproved by the fact that Longomontanus attributes the inven-
tion to Napier. (Astronomica Dutica, p. 7, &c., quoted by Dr. Hutton.) There appears however to be no doubt that Napier's method, and the method attributed to him, was stated, acquainting him with the progress which Napier had then already made.

Besides Longomontanus, several authors have been men-
tioned, and their works referred to, with a view to detract
from the merit of Napier by bringing him in debt to some of his contemporaries. All these attempts appear to pro-
cceed more or less on the supposition that the principle of logarithms was in Napier's time a novelty. The fame of Napier however does not rest on the discovery of that pro-

perly of the numbers to which the advantages of loga-

rithms depend. Long before his time it was known that if the terms of an arithmetical and geometrical series were
placed in justa position, the multiplication, division, invo-
nolution, and evolution of the latter would answer to and might set down the natural logarithms of corresponding numbers, and the operation, multiplication, division, and the former and latter would have been by far more numerous than the insertions, and this would have happened simply because he, in common with all other mathematicians previous to Napier, possessed no means of determining the logarithms corresponding to any proposed number, but merely those corresponding to particular numbers. Until such means were supplied, no table of any practical utility could have been constructed. Napier discovered the means, but had he not been of a peculiarly enterprising disposition, he would have shrunk from the labour which their application required, and his discov-
ery would perhaps have remained a mere sterile truth. It

happened to him, as it has happened to most original dis-
covers, that the view which he took of the problem was not new, but that he was the first to perceive and to publish the solution. But without the disadvantage of division, the problem itself was purely arithmetical; Napier arrived at its solution through geometrical considerations. But not-

withstanding this circumstance and the disadvantages he must have laboured under, arising from the imperfect methods of notation and the almost entire want of a convenient system of notation, his processes even now are to a certain extent the most

easy, and are analogous to those employed in the construc-
tion of the great Tables du Cadastre. * Modern for-
mulas, says Delambre, * furnished processes more sub-

and exact, but not more convenient. (Astronomie Mod-

erne.) Concerning Napier's principles we have not further to

speak; the reader will find them explained in the article LOGARITHMS.

With regard to the importance of the invention, and the

claim of its author on the gratitude of his successors, we

can refer the reader to the works of Laplace. (Exposition du Systeme du Monde.) By reducing to a few days the labour of many months, it doubles, as it were, the life of an astro-
mancer and a mathematician, and circumscribes the space of calculations to a fraction of its original magnitude.

His tables were published in 1614, by the title of 'Miri-

fici Logarithorum Canonis Descrizio,' Edinb., 4to. As

their principal object was to facilitate trigonometrical com-

putations, they contained only the logarithms of the natural

sines corresponding to the quadrant and to

radius = 10'. The principle of their construction Napier

at first withheld, 'waiting the judgment and censure of

mathematicians before exposing the remainder to the ma-

niguity of the public. This explanation was given in a

memorandum work, edited by his son, and published in 1619,

Edinb., 4to. It is entitled 'Miriifici Logarithorum Canonis

Construcio: una cum annotationibus aliquis Doctissimi

H. Henrici Briggi.' The two works were reprinted at Lyon

in 1621.

From the date of the publication of the logarithmic can-
non until the death of Napier, which took place the follow-

graph year, there is little recorded of him which demands par-

icular notice, except his connection with Briggs, already

noticed. [Baro.] His 'Rabdologia, seu Numeri lonicos

per Virgulas, libri duo,' Edinb., 1617, 12mo., was the last of

his literary productions. [NAPIER'S BONES.]

Napier died at Merchiston on the 3rd or 4th of April,

1617 (not 1618), old style, and was interred in the cathedral

church of St. Giles at Edinburgh. On the eastern side of

the cathedral is a stone tablet with a Latin inscription, indi-

cating the spot of his interment. He was twice married. By

his first wife, the daughter of Sir James Stirling of Kier, or

Keir, he had one child, Archibald, who became privy-coun-

sellor to James VI., and was raised by Charles I. to the

peerage in 1697, by the title of Lord Napier. By his second

wife, the daughter of Sir James Chisholm of Crombie, he

had five sons and five daughters. To his third son Robert,

whom he had taught the mathematics, he confided the

care of his descendants.

Of Napier's improvements in trigonometry it is sufficient
to refer to the elegant theorems known as Napier's 'Ano-

logia' (Trigonomotry), and to his theorems of the 'five cir-

cular parts,' which furnishes a ready solution of all the cases

of right-angled triangles.

The only work of Napier not already mentioned is a letter to

Anthony Bacon, entitled 'Secret inventions profitable and

necessary in these days for the defence of the island, and

wisthstanding strangers, enemies to God's truth and reli-

gion, the Christian church.' This work was published by

him, and entitled Neaplaris, or tabulae logarithmicae; but

this is a mistake, Briggs being the author of that work.

(Life, Writings, and Inventions of John Napier, by

David Stewart, earl of Buchan, and Walter Minto, LL.D.,

Perth, 1787, 4to. ; Hutton's Treatise, &c.)

NAPIER'S BONES, or RODS, a contrivance of Napier

to facilitate the performance of multiplication and division,

explained by him in his 'Rabdologia,' published in 1617.

The invention would have been perhaps more employed,

but for his discovery of logarithms: and even yet it might be

used with advantage by young mathematicians in verifica-

tion of their work. We shall therefore describe it, with a

very slight modification, which somewhat facilitates its use.

The preceding cut represents one of the rods belonging to

the number 3. It is a parallelogram with an angle of 45°,

containing nine equilateral parallelograms, with one vertical

line in each. In these figures, which will be visible at a glance, the multiples of the num-

ber which stands at the head, up to nine times. A suf-

cient number of rods must be provided for each of the head-

ings 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, so that by placing the pr

per rods side by side, any number may be seen at the head,

as in the following diagram, which is a rod of Napier in justa-

position ready for the multiplication of 709956
NAPLES, KINGDOM OF, REGNO DI NAPOLI, is the name commonly given to the Continental part of the united kingdom of the two Sicilies, which, in the administrative language of the country, is styled Sicilia Citeriore (the southern Sicily), or Domini di qua dal Faro (territories on this side of the Straits of Messina). This fine region occupies the southern half of the Italian peninsula, being bounded on the north-west by the Papal State, and on every other side by the sea. The frontier line between the kingdom of Naples and the Papal State begins on the coast of the Mediterranean, at the tower Dei Confini, which is a mile or two south-east of Terracina, where the mountains recede from the sea, and at the opening of the basin of the lake of Fondi. The boundary-line then follows an offset of the ridge of the Lepini mountains as far as the valley of the river Sacco, an affluent of the Liris, which opens a natural road into the kingdom. Crossing that valley, the line proceeds first in a northern and then towards a north-western direction, along several ramifications of the Apennines, which divide the waters of the Liris from those of the Anio; then ascending the loftier group which, to the west, bounds the basin of the lake Lucina, it descends by following the downward course of the river Salto into the valley of the Velino, crosses that river a little to the east of Rieti, which belongs to the Papal State, and then again ascends, crossing the backbone or central ridge of the Apennines between the sources of the Nera and those of the Tronto. Descending along the eastern slope of the central ridge, the line follows an offset which skirts the right bank of the Tronto, and afterwards, below Ascoli, the river itself forms the boundary down to the Adriatic. The whole of this tortuous boundary-line is about 150 English miles, but the direct distance, from its extreme point on the Mediterranean to the corresponding point on the Adriatic coast, is not quite 120 miles. Four roads, which are ultimately reduced to two, lead into the kingdom: one by Terracina to Fondi, along the coast of the Mediterranean; the second from Rome, by Palestrina, along the valley of the Sacco, into the valley of the Liris, and from thence into the valley of the Volturno, where it joins the former; the third, by Rieti, Civita Ducale, and Antrodoco, to Aquila and the valley of the Pescara; and the fourth by Ascoli to Terano, and along the coast of the Adriatic to the banks of the Pescara likewise. It is a remarkable fact that the boundaries of the kingdom of Naples, since the foundation of the Sicilian monarchy by the Normans, about eight centuries ago, have been tried throughout all the political vicissitudes of the country.

The greatest length of the kingdom of Naples, from the Tronto to Cape Spartivento at the southern extremity of Calabria, is about 400 miles, in a curved line running through the centres of the three provinces from sea to sea varies greatly. In its northern part, from the mouth of the Garigliano to that of the Pescara, it is about 85 miles wide: farther south, from Cape Misenum near Naples, to the mouth of the Fortore, on the Adriatic coast, it is 100 miles; and from Naples to Capo della Colonna, on Mount Gargano, it is 125 miles. From Naples to Manfredonia it is about 100 miles. South of Naples the gulf of Salerno on one side, and that of Manfredonia on the other, reduce the breadth of the peninsula to 85 miles; but farther south it again widens from the point of Lato to the promontory of Mount Gargano, it is 125 miles. The length of the Iapygian projection is nearly 90 miles, with a mean breadth of 30 miles: the description of this district is given under ORRANTO, Terme.

The breadth of the kingdom again becomes contracted between the deep gulf of Taranto on one side and that of Policastro on the other, being about 65 miles from the mouth of the Brando to that of the Trechina. [BASILICATA.] It becomes extremely narrow on the Adriatic southwards into Calabria: it is 45 miles between the Gulf of Taranto and that of Taranto, and 35 from the mouth of the Cratis to Cape Cetara, after which it widens again to near 60 miles for a length of about 50 miles. South of the Lacinium promontory, now Capo dello Scoiato, the kingdom becomes contracted into a narrow isthmus about 14 miles across, between the gulfs of Squillace and Sant' Eufemia, beyond which it spreads again to a breadth of 25 to 35 miles throughout the length of the province of Calabria Ultra. [CALABRIA.]

The area of the kingdom of Naples is estimated at about 31,600 square miles, or about 2700 square miles more than the area of Ireland. The population consisted in 1815 of 5,059,000 inhabitants; in 1825 it had increased to 5,146,364; in 1832 to 5,073,631; and in 1840 to 6,021,284. (Petroni, Censimento dei Reali Domini di qua dal Faro, 1826; Serrati, Saggio Statistico dell'Italia, 1833; Bollettino Statistico di Milano for January, 1839.) Of this population more than two-thirds, or about four millions, live by agriculture, about half a million by manufactures and other mechanical labour, another half million by trade, including sailors and fishermen; the priests, monks, and nuns amount to about 40,000; lawyers 8000; men 9000; persons employed under government about 30,000; the militia 40,000 men and 50,000 women. The illegitimate children are those born in wedlock as 1 to 22; but in the capital they are as 2 to 13.

The main features of the physical geography of the kingdom are—1. the Apennines, which run through the centre of the country, forming in several parts large masses and high table-lands, which, with their numerous offsets, occupy, especially in the southern part, the whole breadth of the peninsula; 2. the valleys of the Volturno, and its affluents, Sicilia Citeriore; 3. the valleys of the Tronto, and its affluents; 4. the Apennines between the sources of the Nera and those of the Tronto; 5. the valleys of the Volturno and its affluents; 6. the Apennines between the Tronto and the Lici, and the Tronto and the Arno; 7. the valley of the Tanagro, an affluent of the Sele, and some others, are longitudinal, running between ridges parallel to the central chain; 8, a strip of
low land along the coast between the base of the mountains and the sea, varying in width from ten miles to one mile, and in some places even less, especially in Eastern Calabria, and some parts of Abruzzo, where the mountains advance close upon the sea. The sea, too, is hot and noxious in many parts and exposed to inundations from the mountain-torrents.

The principal basins or water-systems are — 1. that of the Liris, or Garigliano, which is about 60 miles long, not remarkable for the extent of its course, extending from the slopes of Mount Camicia, in the Abruzzo, to its estuary near the site of ancient Minturnae. The breadth of the basin in the upper course of the river is much contracted between the central Apennines to the east and the Sabine mountains to the west, thus dividing it into two lakes, but after passing Sora it spreads to about 20 miles in breadth, including the courses of the Fibreno, Melfa, Rapido, Fregido, and other affluents. It also drains part of the Papal province of Campagna through the channel of the river Sacco. The Garigliano is a deep river, always full of water, and is navigable for boats in the lower part of its course. West of the basin of the Garigliano, and separated from it by the mountains of Itri, is the small basin of Fondi, containing a shallow lake of about 50 square miles in extent and divided by the river Vetere. 2. The basin of the Volturno is the largest and most important in the kingdom. The Volturno drains the greater part of the province of Terra di Lavoro, and its affluent the Calore is the drain of Pescara. Both have been traced in a broad river-bed of nearly 100 square miles. The Volturno has a tortuous course of nearly 100 miles, and the Calore runs for about 60 miles before its junction with the Volturno. 3. The fertile plain east of Mount Vesuvius and between it and the Apennines forms a large basin drained by the river Sarno. The basin of the Sele and its affluent the Tanagro includes the greater part of the province of Principato Cita and a part of that of Basilicata which lies west of the central ridge. The Sele has a course of about 60 miles altogether, and the Tanagro, nearly 35 miles. South of the basin of the Sele, the peninsula becomes narrow, the Apenines close upon the sea, and the course of the rivers towards both coasts is very short. In fact Calabria has numerous mountain-torrents, each of which drains its narrow valley, and flows into the coast, near Crati in Calabria Cita. The Crati has its source south of Cosenza, in the high lands of La Sila, a vast group projecting east of the main ridge of the Apennines and extending towards the coast of the gulf of Taranto and Squillace. It runs north direc- tionally to the east and the mountains of La Sila to the east, draining the fine valley of Cosenza; turning eastwards after passing the town of Tarsi, it enters the gulf of Taranto. It has a course of about 60 miles, and flows into the La Sila of Calabria. 6. The basin of Basilecasa, with its four parallel rivers, the Agri, Sinnio, Bradano, and Basiento, is fully described in the article BASILICA. EAST OF BASILICA, the narrow Iapigian peninsula, which is intersected in its length by the Candelaro, and only 80 miles wide, has but a small importance; and this is also the case with the province of Terra di Bari. 7. The Ofanto, one of the principal rivers of the kingdom, rises in the Apennines of Conza within the boundaries of Principato Ultra; it drains the part of that province which lies east of 35 above its junction, and also the northern part of Basilicata, as well as a part of Capitanata and Terra di Bari, and after a course of about 70 miles enters the Adriatic. It receives no affluents of any importance.

8. The great plain of Apulia is drained by the Cara- pao, which runs north through several small streams, nearly parallel, and run from the central Apennines to the sea. The Candelaro has several affluents, and drains a considerable tract of country between the group of Mount Gargano and the province of Messina. The Abruzzi contain numerous and rapid streams which run direct to the sea along deep valleys between lofty parallel ridges; but there are no extensive basins, with the exception of that of the river Pesca, which has a course of about 80 miles, and runs on one side the water of its basin through the chain of the Apennines, including Mount Velino, which runs north of Lake Fusaro, and on the other those of the lofty mass of Monte Corno, which projects eastwards towards the Adriatic coast and has snow on its summit almost the whole year. The Pesca, as well, flows through a narrow defile near the town of Popoli and turns eastwards towards the Adriatic, receiving from the south the waters of another great outlying group of Apennines, called Mount Majella, in the province of Chieti. 10. The basin of Lake Fusaro, or Celeno, in the centre of the peninsula, is surrounded by mountains on all sides. The lake, which is 16 miles long and nine miles broad, receives the waters of about 400 square miles, mostly of high lands covered with snow for a great part of the year, and yet it has no visible outlet. But there are subterraneous drains from the basin of this lake, by which the water is sent northwards in the bordering valleys of the Liris on one side and the upper Pesca on the other. On the side of the Liris the intervening ridge about Capistrello is much depressed, and there the 'emissary' or tunnel was made in the time of the emperor Claudius, which is now in course of repair. The Liris runs in a deep narrow valley about three miles from the lake.

Celeno.

The kingdom of Naples has a coast-line of about 1500 miles in length, two-fifths of which lie on the west or Mediterranean sea, and the rest on the Ionian and Adria- tic. The Ionian sea, according to the Italian denomination, extends from the Strait of Messina to Cape Leuce, at the extremity of the Iapigian peninsula. Unfortunately this very extensive line of coast has few harbours. The deficiency of tides in the Mediterranean renders the estuaries of rivers useless for the purpose of navigation; and this is a great and lasting disadvantage to the countries round that sea, which alone would determine their maritime influence in this part of the world. The basin of the Garigliano, Volturno, Sele, Crati, Ofanto, Pescara, and other rivers of the kingdom of Naples, if they were tidal, would afford good natural harbours for large vessels, whilst, as it is, the bars at their entrance are impassable except for small craft. For the latter reason the Mediterranean coasts are those of Gaeta and Naples, and even these are not safe at all times, and do not admit of large vessels. But the Gulf of Baiae, in the Bay of Naples, affords a safe anchorage for the largest men of war. The natural port of Salerno is filled up with sand, which has been the fate of most harbours on the coast of the kingdom, and it has not been improved. The basin of the Sele is one of the least evil, it has been proposed to raise, instead of continuous mole, piers made of arches, as the ancients did at Puteoli, which, by leaving free ingress and egress to the waters, would prevent the constant accumulation of the sand. (Dei Cari, NARRATIVE OF THE BAY OF NAPLES, BETWEEN THE masses, and of the rocks, 1832.) On the eastern coast are the ports of Taranto and Brindisi; Gallipoli has merely a roadstead; the ports of Trani and Barletta are filled up, but most of them is exposed to the dangers of storms. The last has been begun at Bari. On all the coast of Abruzzo there is no harbour; the mouth of the Pescara and the mouth of Otranto afford shelter only for small craft. A new harbour is in course of construction at Ortona. The coast of the Abruzzi, and green part of Italy, except at the point of Cam- piloli, where there is deep water, and the position is favoursa- ble to the construction of a harbour which has been pro- jected. (Afan di River, Considerazioni sui mezzi di ristorare il valore proprio ai dom che la natura ha largamente concevuto al Regno della Sicilia, 2 vol. 1831.)

The productions of the soil throughout the kingdom are various. The staple products are corn, wine, oil, wool, and silk. The plains of Apulia produce vast quantities of corn for exportation. A quantity of wool is exported from the province of Lucania, and there are two or three small towns which are celebrated for the quality of their silk. (CAPITANATA.) Oil is likewise exported from the eastern provinces and from Calabria, to the amount of about nineteen millions of Italian livres, or about 750,000 l. The silk of Gallipoli is the great oil mart. Silk is made in Calabria and Abruzzo. Cotton, also, is grown in all parts of Calabria, as is full bodied and generous as any Portuguese and Spanish wine, yet little of it is kept or sent to the northern parts of Europe. Naples however exports wine to Rome, and her wines are consumed in Italy. Some brandy is made and exported to America. Some of the wines made in the
neighbourhood of Naples, at Piedimonte, Procida, Capri, Gragnano, and at the foot of Mount Vesuvius (the latter is known by the name of 'Lachryma Christi'), are very fine and well flavoured. The country produces most kinds of fruit, such as figs, chestnuts, almonds, oranges, lemons, pomegranates, which has visited it. Tobacco is cultivated chiefly near Lecce, on the island of Brindisi, and the sugar-cane in Calabria. Flax, hemp, and rice are also raised in considerable quantity in the latter. Roquette cheese is made chiefly in Abbruzzo and Apulia. In some favoured spots, such as in the neighbourhood of Naples, at the foot of Mount Vesuvius, near Monteolone and Reggio in Calabria, the fertility of the soil seems inexhaustible.

There is a rich district of the same name in Apulia. The country, which is worked for the government, Coal is found also in Calabria near Bristo (Vivengio, Relazione dei Territori di Calabria, Naples, 1788; Savarezi, Piaggio in Calabria, 1801-2; Tenore, Essai sur la Géographie physique et botanique du Royaume de Naples, 1827.) The forests—those through which the Apennines were once clothed have in great part disappeared through the waste, improvidence, and neglect of the people. The various governments have taken no notice of these woods, and great damage has been done. This is a very serious evil, for not only fuel and timber have become scarce, but the destruction of the forests has caused the springs to be dried up and occasional summer droughts to appear in the adjacent plains, whilst the winter rains have washed away the earth, and the consequent modifications of the head and base of the rocks, and the torrents carrying down alluvial matter into the valleys and plains have damaged whole tracts of country, choked up the beds of rivers, and occasioned the formation of pestilential marshes. Afn di Rivers, a town of a provincial prominence, is one of the calamitous effects of the destruction of the Apennine forests. By a law concerning the forests, promulgated on the 21st August, 1826, an attempt has been made to arrest the progress of the evil.

The coast is a narrow, wave-beaten, rock-bound strip of low land which skirts the sea-coast of Italy. It is in many places marshy and covered with underwood. Herds of black cattle, buffaloes, and pigs live in that uninhabited region. Something has been done of late years towards reclaiming the marshes, especially between the mouth of the Volturino and Cuma, and on the opposite coast of Apulia. [BRINDISI; CAPITANA.] At the beginning of the present century there was no carriage-road through the kingdom, with the exception of the high road from Rome to Naples. Since that time roads have been gradually extended by a treaty with the States of the Papal States at Rome, as well as by those of the Kingdom of Naples, to Bari, Manfredonia, and Taranto in Apulia, to Chieti, Termoli, and Aquila in Abruzzo, to Potenza in Basilicata, to Campania in the province of Sannio, and other parts. The most important of these has been constructed. A handsome suspension-bridge has been built across the Struma river, which, although on the high road from Rome to Naples, had been crossed for centuries only by a miserable ferry. This bridge is divided for administrative purposes into 13 provinces. We subjoin the population of each, as it was by the last authentic returns which we have seen, of 1837, which, compared with those of Petroni for 1825, show that the population has been gradually increasing at the average rate of 0.12 per cent. of the inhabitants of the same provinces of the Kingdom of Naples, 720,796 inhabitants; Terra di Lavoro, head town Cesena, 664,138 inhabitants; Provincia Citra, head town Salerno, 539,527; Principato Ultra, head town Avellino, 375,939; Sannio, formerly called Contado di Molise, head town Isernia, 280,292; Provincia Cilento, head town Chieti, 284,482; Abruzzo Ultra Primo, head town Teramo, 264,629; Abruzzo Ultra Secondo, head town Aquila, 299,543; Capitanata, head town Foggia, 273,489; Terra di Bari, head town Bari, 441,964; Terra d'Otranto, head town Lecce, 332,702; Provincia Cilento, head town Cosenza, 434,622; Calabria Prima Ultra, head town Reggio, 283,868; Calabria Citra Seconda, head town Catanzaro, 283,122. In the common discourse these divisions are often called by the name of the head town, as 'Provincia di Lecce,' 'Provincia di Teramo,' &c. The provinces are divided into districts, and the districts into communes. Each province is administered by an 'Intendente,' or king's lieutenant, appointed by the king, and changed every three years. In every province there is a 'Consiglio provinciale,' or a council of notables, proposed by the communal councils, and appointed by the king, which assembles once a year, and examines the provincial accounts and proposes local improvements. Keppel Craven, the latest authority on the subject, says that every province has at least one representative. The king speaks favourably of the character, qualifications, and generality, of the intendents. The same praise however ought not perhaps to be extended to the subaltern or district and police authorities. Every commune has a sindaco, who corresponds to the Italian word for the English mayor. There is also a communal council, called 'Decurionato,' chosen by ballot from among the notables or proprietors, fixes the local rates, administers the revenue, and appoints the municipal officers, subject however to the sanction of the intendente. One of these officers is called 'proprietor,' and is a member of the municipal council, which sits by ballot between parties at variance, for the purpose of preventing them from going to law upon trifling grounds. (Serristori; Colletta, Storia dei Reami di Napoli; Orloff, Mémories hist. de la R. Tram.)

The judicial department consists of four 'Gran Corti Civili,' which sit at Naples, Aquila, Trani, and Catanzaro; a criminal court, and a civil court in every head town of a province; and a judge of instruction in every district, and in case of circumstances of highly important character, he may order an examination before a jury. In every province there is a 'Consiglio inferiore,' of which there are 525 in the whole kingdom. A supreme court of cassation, 'Corte Suprema di Giustizia,' sits at Naples. Trials are public in the kingdom of Naples, as in France. The French civil code, with some modifications, has been retained, as well as the French commercial code.

For the purposes of public instruction there is an elementary school in every commune; grammar schools, 'scuole secondarie,' in most towns; a royal college in every environs, and the superior laws of 1832, 1833, and 1837, have caused the education of young ladies, founded by Caroline, Murat's wife, and since patronised and increased by Queen Isabella, the wife of Francis, during the education of females in general is much neglected.

The ecclesiastical establishment consists of 20 archbishops and 65 bishops, 72 clerical seminaries, and 3767 rectors of parishes. The number of priests, monks, and nuns has been stated above. Serristori, in 1823, reckons the monks at 11,000, and the nuns at 9000; but Petroni, in 1826, reckoned the former only at 8455, and the nuns at 8185. It is possible that the monks may have increased since the former date. The ecclesiastical jurisdiction and discipline are exercised by the various dioceses, the bishop of which is the prince of the church, and is assisted by consuls, who act as consuls of the same name. The consuls have been established, and the province of Foggia, to the accommodation of foreigners. Several communes in Calabria, Apulia, and Abruzzo follow the Greek ritual, but they belong to the Latin communion, and acknowledge the pope as their spiritual head.

The history of the kingdom and the present constitution of the monarchy are given under Sicily. Vol. XVI. THE KINGDOM OF THE inhabi
tants of the countries composing the kingdom of Naples are derived from various and mixed races. The ancient Samnites, Piceni, Umbrians, Osci, Lucanians, and other people of old Italian origin; the Ritusian Campanians, the wild Bruttii, the Greek population of the coasts,—of Magna Græcia, of Cumae and Neapolis,—after having been feebly thinned during their conquest by the Romans, the wars of the Longobards, the war of the French empire, the country was overrun rather than occupied by the northern tribes, but afterwards returned to the allegiance of the Byzantine emperors, when it received a fresh admixture of Greek blood and Greek language and Greek usages. In the sixteenth and seventeenth centuries the kingdom was possessed by the Hapsburgs, who added the kingdom of Sicily to the dominions of the emperor, and founded there a powerful duchy, which survived the fall of their power in North Italy. In the eleventh century the Normans came, who conquered both the Longobards and the Greeks, and founded the...
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monarchy of the two Sicilies upon the base of feudal institutions. Then came in succession the Suebians, the French or Provencals, the Aragonese, and the Spaniards. All these nations have left traces of their residence. A dash of Greek character is still observable in the temper, customs, and art of the people of the two Sicilies. The descent of the people of the two Sicilies is related in the same manner by the inhabitants of different parts of the kingdom (Arbuzzo; Calabria); whilst the capital, from the constant influx of provincials, contains specimens of them all. But notwithstanding these varieties, the long habits of amalgamation produced by a central administration and a large capitation tax, have produced a lasting spirit of common nationality, which is perhaps stronger in the kingdom of Naples than in any other Italian state. Neapolitan, not Italian, is the national appellation. Generally speaking, the Neapolitan is quiet, reserved, humorous, fond of music and dancing, rather inclined to bombast and hyperbole, firy but changeable, inclined to pleasure and ease, hospitable, susceptible of generous feelings, and also of a high social polish.

Notwithstanding the common prejudice to the contrary, the Neapolitan is no mean defier of personal courage. During the last war, Neapolitan troops fought well as auxiliaries in the ranks of the French, Austrian, and English armies; the people also fought desperately in defence of their capital in 1799; and the long and obstinate war in Calabria from 1805 to 1810, was crowned by a successful termination. If the regular troops have not shown the same spirit in defence of the kingdom, this has proceeded from various peculiar circumstances which are fairly explained by Colletta in his History already quoted, and likewise by the works later of Fasoli and Vicende dei Popoli Italiani, dal 1801 al 1815. See also the Antologia Militare, of which the sixth volume has been lately published at Naples.

NAPLES, PROVINCE OF (Provincia di Napoli), is the metropolis, and principal province of the kingdom of the two Sicilies, which includes the capital [NAPLES, CITY OF] and the territory round the bay from Caire Misenum and Cumna on the west to Castellamare and Sorrento on the south-east. The islands of Ischia and Procida belong also to the province of Naples. The province is divided into four districts: 1. Naples; 2. Pozzuoli, which includes the whole western division and the islands; 3. Castellamare, which comprises the territory at the base of Mount Vesuvius, and the coast opposite Naples as far as Sorrento; 4. Capri, which includes the island of Capri, stretching north of the range of hills behind the city of Naples. This tract extends as far as a line which, beginning on the sea-coast half way between the lakes of Licio and Pozzuoli, runs in an eastern direction along the town of Antiparos, which belongs to the province of Terracina di Lavoro: it then runs south-east skirting the north base of Mount Vesuvius, and not including the towns of Acerola, Nola, and Noeroa: it next follows the ridge of hills which run from the peninsula of Sorrento at the back of Castellamare, including the towns of Castellamare, Vico, and Sorrento. The summit of the ridge divides the province of Naples from that of Principato Citra, or province of Salerno. The whole of this territory formed until lately part of the kingdom of Two Sicilies, is not geographically separated; but owing to the great population of the capital and surrounding territory, it has been found convenient for administrative purposes to constitute it into a distinct province. The province of Naples, exclusive of its dependencies, and including the town of Naples, contains, according to the returns of 1837, 374,049 inhabitants.

The principal towns of the province of Naples, exclusive of the capital, are: 1. Pozzuoli, the ancient Portus Uulianus on the east side of the gulph of the same name, and opposite to Rome. It was colonized by the ancient Greeks, and founded in the sixth century B.C., and now a bishop's see and a poor-looking town, with 10,000 inhabitants. [Pozzuoli] The whole surrounding country is of a volcanic character. The hill called Solfatara, which is the crater of a volcano not yet extinct, rises to the east above the town. 2. Agerola, a large village or town of 13,000 inhabitants, north-east of Naples in the Campian plain, has some hat manufactories. 3. Ficarra Maggiore, near the ancient Atella, is famous for its strawberry beds, which supply the markets of Naples. 4. Somma, at the north base of Mount Vesuvius, has 7,000 inhabitants. 5. Sant' Anastasia, near Somma, has 6,000 inhabitants. The whole neighbourhood produces the luscious wine known by the name of Lachryma Christi. The moveable population is large; there are also many seaports with small drab fishing-boats. Sorrento, on the west slope of Vesuvius, on the site of Heracleaunum, contains together about 14,000 inhabitants. Visitors who ascend Mount Vesuvius pass through Resina. Portici has a royal palace; its museum of antiquities obtained from Heracleaunum and Pompeii has been lately remodeled for the Museum Bourbonico at Naples. East of Resina is another pretty royal villa called La Favorita, in a lovely situation near the sea-shore.

7. Torre del Greco, about two miles south-east of Portici, at the foot of Vesuvius, a town of 13,000 inhabitants, has been converted into a bathing resort, which has been largely built over and over again. The inhabitants are mostly addicted to a seafaring life. 8. Torre dell'Ammunizione, about four miles south-east of Torre del Greco, and near the site of Pompeii, has 9,000 inhabitants, a manufacture of muskets for the Royal navy.

It is also known for its great manufactories of macaroni, which is the best in Naples, and known by the name of 'Maccaroni della Costa.' North of Torre dell'Ammunizione is the large village of Boscotrecase, and further on, on the south slope of Vesuvius, a town of 13,000 inhabitants. 9. Castellamare, at the south-east extremity of the Bay of Naples, near the site of Stabium, is on a delightful situation on the sea-coast, at the foot of the lofty mountain St. Angelo, the Mon. Lactarius of the antients, the modern Granger. 10. Vico Equense, on the southern slopes of Vesuvius, a town belonging to the province of Naples. 10. Vico (Vicus Aquasun), a small town perched upon the cliffs above the coast, about 4 miles south-west of Castellamare, was the birth-place of the metaphysician Ercole Giambattista di Vico. 11. Sorrento is a delightful town about 3 miles from the sea; it is a famous grove of orange and mulberry trees, and contains several villages and numerous country-houses. The town of Sorrento has 5,000 inhabitants, is a bishop's see, and the birth-place of Tasso. The plain of Sorrento is much frequented by the wealthy Neapolitans during summer. There are boats which cross daily from Naples to Sorrento, and return loaded with oranges and other fruit. Silk is also produced here.

The country round Naples is the most populous neighbour-
before the royal palace. The old city forms a closely built square of about a mile on each side: part of its walls, towers, and ditches still remain, and several of the gates are standing, namely, Porta Nolana, on the road to Nola, Porta Capuana, on the road to Apulia, and Porta S. Gennaro, and Porta San Biagio, on the road to Gaeta. The whole western part of the town, which is in a plain, has narrow streets and lofty massive houses, many of them six or seven stories high; it is very thickly inhabited, and contains more than half the whole population of the capital. West of Toledo numerous streets run up the hill of Sant' Elmo, which is covered with houses for two-thirds of its height. South of the hill of Sant' Elmo, and between it and the point of Pizzofalcone, is another depression, which affords a carriage communication between Toledo and the western crescent, or set of hills, which is called by the general name of Chiaia, "the quay." This part, which is much contracted between the hills and the sea, extends in length about a mile and a half between the hill of Pizzofalcone to the east and that of Posillipo to the west. A fine road runs all this length, parallel to the sea-shore, and the gardens of the royal residence, and covered with houses on one side and a row of fine houses on the other; it then turns along the base of Mount Posillipo, and gradually ascending it, leads to the other side of it towards Pozzuoli. There is another and straighter road to Pozzuoli by what is called the vicolo dei peli; but through the mountain for about three-quarters of a mile.

Naples is an open city like London, but it has a sort of barriers or custom-house posts at the principal avenues leading into the town, for the purpose of collecting the "gates", a tax like the tonti or variable duties of the ancients. At the boundary of the old city, and of the suburb of La Sanità, at the foot of Capodimonte, to the shore of Santa Lucia, is about two miles; but in other directions it is much less.

For buildings at Naples are in a good architectural style; they are neither overloaded with ornaments or disproportionate in their parts. The most remarkable are—

1. The royal palace, "La Reggia," a large mass of buildings, constructed at two different times, first by the viceroy Pedro de Toledo, which part goes by the name of Palazzo Velasco; and the second, after the design of the architect Fontana, under the Spanish viceroy Count De Lemos, in the seventeenth century. This new palace has a front of nearly 400 feet in length, with three orders of pillars, one above the other, Doric, Ionic, and Corinthian. The palace has two sets of arcades, one above the other, supported by granite columns; the grand staircase is ample and commodious. The apartments are adorned with valuable paintings of the old Italian masters. The great gallery contains the collection of paintings in the possession of the royal house: the Stanzas of the Hall of the Kings, the Hall of the Antiques, the Hall of the Chinese, the Hall of the Bolognese, and the Hall of the Spanish. The noble saloon called the Chamber of the Kings, is rich in paintings; it contains a splendid mausoleum of Charles I. of Anjou, the conqueror of Naples. The adjoining chambers of the palace are rich in paintings. A splendid library, and a collection of manuscripts of the ages, are in the same building. The royal library contains 150,000 printed volumes, and about 3000 MSS. A catalogue of it was published in 1830, in 2 vols. fol. Besides this library, which is open to the public, there are two or three other private libraries, such as those of Don Angelo à Nido, and that of the convent of San Filippo Neri.

3. The churches of Naples amount to about two hundred; but in general they are remarkable for their monuments, paintings, and other accessories, rather than for their architecture. The most remarkable is the church of San Francesco di Paola, which was begun by the Neapolitan architect and sculptor of the thirteenth century, who has been since repeatedly altered, ornamented, and spoiled. The interior is rich in ancient columns of valuable marbles; it contains a splendid mausoleum of Charles I. of Anjou, the conqueror of Naples. The adjoining chapel of San Filippo Neri is rich in paintings: the ceremony of the liquefaction of the blood of St. Januarius continues to be performed there annually. Valery, in his 'Voyages Historiques et Litteraires en Italie,' has described the church of San Filippo Neri. The church is built over the site of a temple of Castor and Pollux, contains some fluted columns of marble, the remains of the ancient structure.

4. The church of San Lorenzo, founded by Charles of Anjou, on the site of the town-house, where the municipal council of the city formerly used to assemble, contains several tombs and some good paintings. The church of San Filippo Neri is built in better taste than most of the churches of the city. The church of San Giuseppe dei Francesi, on the Pizzofalcone, was erected by the French under the direction of the architect and sculptor of the eighteenth century, the church of San Filippo Neri contains a splendid mausoleum of Charles I. of Anjou, and that of the convent of the Dominicans, which contains a splendid mausoleum of Raimondo Capponi, an original Neapolitan thinker and writer in the early part of the eighteenth century. The church of San Filippo Neri contains a splendid mausoleum of Charles I. of Anjou, and that of the convent of the Dominicans, which contains a splendid mausoleum of Raimondo Capponi, an original Neapolitan thinker and writer in the early part of the eighteenth century. The church of San Filippo Neri contains a splendid mausoleum of Charles I. of Anjou, and that of the convent of the Dominicans, which contains a splendid mausoleum of Raimondo Capponi, an original Neapolitan thinker and writer in the early part of the eighteenth century. The church of San Filippo Neri contains a splendid mausoleum of Charles I. of Anjou, and that of the convent of the Dominicans, which contains a splendid mausoleum of Raimondo Capponi, an original Neapolitan thinker and writer in the early part of the eighteenth century.

5. The church of Santa Chiara is elegant and rich: it contains the monuments of Robert of Anjou, the friend of Sancho; of his wife, Isabella of Calabria; of Joanna I.; and of Raimondo Capponi, a Moorish slave, who became great seneschal of the kingdom, and acted a part in the murder of Joanna's husband, Andrea of Hungary. The adjoining church of Gesù Nuovo, the façade of which has been compared to that of St. Peter's at Rome, has in the interior the appearance of a splendid ball-room. It now belongs to the Jesuits, who were re-established at Naples in 1816. The church of Monte Oliveto is rich in sculptures by Giovanni di Nola, Donatello, Benedetto da Maiano, and other distinguished masters. The church of San Giuseppe dei Franci, on the Pizzofalcone, is one of the best Spanish viceries of Naples. The small hospital church of San Giovanni di Carbonara is remarkable for the monuments of King Ladislaus and his sister Joanna II.; and in the chapel behind the altar, that of her favourite,
the" in the document.
reside, in narrow alleys, in their boats, and wherever they could find shelter. To these were added indiscriminately the numerous class of fishermen, an industrious race, whose habits have always been more domestic and orderly than those of the common lazzaroni. All these people were vaguely known to the police, not as individuals, a muscular, brazen, and erect set of men, but totally uneducated and little civilised, very abstemious and frugal in their habits, mostly barefooted, living from day to day on their casual earnings, their dress consisting merely of a sort of leather trousers and a goatskin coat, worn in quiet times, but apt to run riot on the first political ex- citement or tumult. The name lazzaro is said to have been derived from the numerous lepers who once abounded on the coasts of the Mediterranean, and who invoked as their patron the Lazarus who is mentioned in the Gospel, a charitable order, or fraternity, which was instituted in the middle ages for their relief, assumed the name of 'Order of St. Lazarus.' The lepers were obliged to wear a peculiar dress, consisting of white shirt and trousers and hood. After the leprosy became extinct, the same garments, to be worn by the lower orders for the sake of cleanliness and conven- ience in the warm climate of Naples, and the name lazzari was retained and applied to that class. This is the etymology given by Galibani and others, in the Vocabolario Del Dialecto Napoletano, published at Naples in 1789. Another explanation adds that already in his time the number of the lazzari had much decreased, owing to the progress of civilization, and that 'many among the people who had the appearance of lazziaroti, and in each other, were once two towns, were dressed in their Sunday clothes.' As a peculiar class, the lazzari may be said to be now extinct: the lower orders live like those of other cities; they are all duly registered in their respective parishes, they have all a domicile of some sort, and the political regulations enforced for the last thirty years, have produced a material alteration in their habits, though the every-day clothing of many of them continues to be the same as before.

The nobility at Naples are very numerous, but, excepting their houses and residences, are as poor above as their cowntrymen. The alterations made in the law of inheri- tance, by which all the children succeed in equal or nearly equal portions, as in France, have broken down the fortunes of most families, which were already encumbered by debts, the consequence of want of order, of indulgence, and expensive habits of living. The most important and interesting class at Naples present consists of the higher ranks of the middle orders, including lawyers, physicians, professors, and men of other liberal professions, some native merchants, the governors of the province, the superior officers of the clergy. Among these are found considerable information, much civility united to frankness, great sociability, and respect for decency and morality. Those who wish to know more particularly the present state of the arts and sciences in Naples during the last half century, may consult Colletta, Storia del Reame di Napoli, a work of great moral penetration, extensive observation, and written with remarkable impartiality.

The palaces of the nobility are spacious and massive, but few of them are in a good architectural style. The most remarkable are the palazzo Gravina or Orsini, the palace Maddaloni, that of Sansevero, remarkable for its chapel, adorned with some good statues, that of Dell' Roccas, those of Farnese, and of Paruta, and the palace of the Lomellini, which has been raised between the streets Toledo and S. Giacomo, for the offices of the financial department and for the bank of the Two Sicilies, is one of the finest structures in Naples.

Naples is not so well supplied with water as Rome, and has not such handsome fountains; those of Fontana Me- dana and Monte Oliveto are the best. Several aqueducts from the neighbouring mountains supply the water, besides which most houses have cisterns. There is a sulphureous spring close to the monastery of Santa Lucia in the fields and drunk by the inhabitants in the spring.

The neighbourhood of Naples abounds in delightful walks. The public gardens, or ' Villa Reale,' extending along the shore of Chiaia for nearly a mile, enjoy the ad- vantage of the sea-breeze, and of a view unrivalled in the world. The new road over the hill of Posilipo is a beauti- ful drive. The hills of Capodimonte and Scyillo, and the suburbs of Infrascata and Arenella, at the back of Sant' Elmo, abound with pleasant walks and a variety of scenery.

These, as well as the other neighbouring hills of Vomero, Posilipo, &c., are covered with country-houses and gardens of all sizes. But the hills are mostly destitute of trees, and appear barren and parched, especially in summer.

Naples is an archbishop's see, and is divided into fifty parishes, including the neighbouring villages.

The town is abundantly supplied with provisions of every kind; fish and shell-fish are plentiful, as well as vegetables and fruits. Snow, of which a great quantity is used, espe- cially in summer, for cooling the drink and for ices, is produced in the mountain of Castellamare, where it is kept in large reservoirs.

The great street of Toledo is thronged with people and carriages at all times of the day, and until very late at night, or rather until two or three o'clock in the morning, when fashionable people retire to rest. It is decidedly the most exciting street in Europe, as the people are in the habit of voice- rating at the top of their voice; and others must do the same in order to be heard. The motley groups which are seen mixing pell-mell in the street, the crowded balconies above, the numerous venders of provisions, the arquaiu, or sellers of ice-water, at the corners of the by-streets, the life out of doors, which is a general habit in this country, all render the streets of Naples, and especially that of Toledo, most curious to a stranger.

Naples, or Neapolis, as it is called, is ' New City,' was a Greek colony from Cumna; the date of its origin is not known. The story of its first foundation, under the name of Partho- nope, is a mythic tradition. Livy (b. viii. 22) says that there were 1100 colonists, of which 350 were from Cumna, and 250 from Cuma, and that the rest were natives of Naples, the inhabitants of both being from Cumna, but Palermo, had long before Livy's time, merged into the new town, or Neapolis.

Neapolis, after its first foundation by the Cumans, re- ceived colonists from Chalcis, Pithekoussa, and Samos, and subsequently admitted some Campanians also among the body of citizens. (Strabo, p. 246. Casaub.) It became allied to the Samnites, but after their subjugation by Rome it maintained its independence as a republic, and during the Punic wars against Carthage and lastly against Hannibal, and with it a rich present in golden vases, which the people took from their temples to defray the expenses of the war. (Livy, xxii. 32.) It continued after- wards an ally to Rome and became a municipality. After the fall of the empire, it was taken by Belisarius and, lastly destroyed by Totila, A.D. 543. It was afterwards rebuilt, and annexed to the Longobard duchy of Beneventum, but after the decline of the Longo- bard power, when Colonna assumed the dignity of a kind of sovereignty over southern Italy, Naples had its dukedoms, which were chosen by the inhabitants. In the ninth century the dukedoms of Beneventum obliged it to pay tribute. When the duky of Beneventum was split into three principalities, Naples, Capua, and Salerno, the dukes of Naples, in order to maintain its independence of the other two, called in the Saracens, who devastated the shores of Cam- pania. The Norman adventurers lent their assistance to the prince of Salerno against these pithical hordes, and afterwards by degrees established their own power in Apulia and Sicily. Naples was one of the last towns which sub- mitted to the Normans; it acknowledged king Roger I, of Sicily, as its sovereign, about A.D. 1137. The subsequent his- tory of Naples is political and historical, and is given under the head of Sicily, TWO KINGDOM OF THE.

The following are the principal works concerning the town of Naples, besides those which have been mentioned in this article.—Celano, Notizie del bello, dell' antico, e del moderno della Città di Napoli, 4 vols., 1813; Romane- nelli, Napoli antica e moderna, 3 vols. 8vo., 1813; Vergas, Ragguagli storici dell' Origine di Napoli, 4to., 1754; and also Dissertationen istorico-legiustissi Monticelli, Sito, Em- pietza della Liburia Ducale, o stori dell' Agro e Territorio di Napoli, 4 vols., 1819; Gara, and Di Nicolaci delli Napoli, vol. 1, 1647; Chiocherei, Antiqnt. Neopoliitana Ecclesiae Catalogus apo Apostolorum temporibus ad annum 1643, fol.; Stefano (Pietro di), Descrizione dei Luoghi Sacri di Napoli, 4to., 1560; Caracciolo (Eugenio), Napoli Sacra, 4to., 1623; Lasena (Pietro), Dell' antico Ginnasio Napo- litano, 4to., 1641, 1648; Origlia, Istoria dello Studio di Napoli, 2 vols. 4to. 1754; Signorelli, Storia della Reale Acca- demia delle Scienze e Belle Lettere a Napoli, 1787; Atti monelli, Delle Acque Minerali di Napoli, 4to., 1809; Ricci, Anadi chimica dell' Acqua Ferroa e Sulfurea di Napoli.
NAPOLEON. [Bonaparte.]  

NAPOLEON, CODE. [Coden, Las Cinc.]  

NAPOLI DI MALVASIA, or MONEMBASIA, a town built on or in the small island of Lycia, and connected with the mainland by a bridge about 540 feet in length. Its situation gave rise to its name Monembasia (single entrance). About four miles north of the bridge, along the coast of the mainland, are some ruins which Leake considers to be those of Epidaurus Lymera, while Monembasia is the Minoa of Pausanias, which was a small place in his time. As Epidaurus fell into decay, the town on the island grew into importance, and it then probably assumed the name of Neapolis, or new town, in addition to that of Monembasia. It was a place of some consequence under the Byzantine emperors, and Andronicus Comnenus in the twelfth century founded here a monastery, which still exists, and the church of which is one of the largest in Greece. The Franks, when they conquered a great part of the empire in the thirteenth century, corrupted the name of Monembasia into that of Monembasa. The country in the neighbouring district formerly produced a luscious wine, to which the Venetians gave the name of Malvasia from the town at which it was shipped, and the name has been since applied as a generic appellation to wines of the same quality made in other parts of the Mediterranean, as at Lipari, in Sardinia, Spain, &c. This is the kind of wine called in English Malvasia.

The island of Monembasa is hilly, about half a mile in length, and one third of a mile in breadth. The castle is on the summit of the hill, and the town, which is built below it, extends to the sea on the south side of the island. The streets are narrow and steep; the place contains about 300 houses, besides 50 more in the castle. The ramparts and several other buildings were constructed by the Venetians, who took possession of the place in the thirteenth century and kept it till 1540, when it was given up to the Turks by a treaty in this occasion most of the inhabitants left the town, and were taken by the Venetian garrison and found an asylum in the other Venetian possessions. It now forms part of the new kingdom of Greece.

The bishop of Monembasa, a metropolitan of high rank in the Greek church, has seven suffragan bishops under him, including those of the neighbouring districts of Maims (Coronelli: Lease.)

NAPOLI DI ROMANIA, NAUPLIA, ANAPL, a town of the Morea, built on a rocky promontory at the north-east extremity of the Argolic Gulf. The harbour between this promontory and the north coast is large and tolerably safe, but has become too shallow to admit large ships. A small fortified island lies at the entrance of the harbour. A steep and rocky mountain rises above it to the south-east called Palamedes, a very ancient appellation derived from Palamedes, the reputed son of Neptune and founder of the town. On this cliff is the castle, which is very strong owing to its almost inaccessible situation.

Naples was once the port and arsenal of Argos, but in the time of Pausanias it was deserted. It revived under the Byzantine emperors, was occupied by the Venetians in the thirteenth century, and became their chief settlement in the Morea, until it was taken from them by Sultan Sulayman. For a long time it was in the possession of Venetian construction, but the ramparts towards the east are partly composed of the ancient walls of the town, which are of a similar construction with and probably of the same date as those of the Acropolis of Argos. Other and later remains of Hellenic construction are seen on the slope of the tabular summit above the town.

Napulia, after the Greek insurrection, remained for several years the head town of Greece, until it was superseded by Athens. Its population, which had risen to about 60,000 in the middle ages, has receded, and is now very irregular and dirty, and the air is not wholesome. A few of the houses and the barracks are of a superior description to the rest of the buildings. The bishop, of the Eastern communion, is styled bishop of Argos and Napulia. There is a great Latin church. An aqueduct from a rocky ridge near Tiryns supplies the town. (Spon; Coronelli: Leake; Gel.) From the old Greek name of Napulia the Franks made corruption of that of Napoli, to which they added 'Di Romana' to distinguish it from the Italian Napoleone.

NARBONNE, a city in France, in the department of Aude, near the coast of the Mediterranean, in 43° 11' N. lat. and 3° 0' E. long. 530 miles from Paris by Orleans, Chateauroux, Limoges, Cahors, Montauban, and Toulouse. (Napoleone.)

Narbonne (the Roman Narbo, or Narbo Martius) is one of the oldest cities of France. A Roman colony was planted here about B.C. 116, and it had been one of the chief towns of the Volve Arcodum, a Celtic people, long before that time. Narbonne was the subject of a papal bull in 861 A.D. (p. 101. Casab.)

The name of Narbo as 'a watch-tower and bulwark of Rome.'

The taking of Toulouse by Clovis and the Franks, Narbonne became the Vingisgoth capital: it was repeatedly taken by the Franks and Vandals, and the site of the Franks was afterwards merged in the county of Toulousé. Under the marquises of Septimania, Narbonne was governed by viziers, who were at first removable, but afterwards became hereditary, and were feudatories of the counts of Toulouse and (for a portion of the town) of the archbishops of Narbonne. Aymery III. vaizier of Narbonne, was engaged in the crusade against the Albigenses: the inquisition was established at Narbonne in his time, but he afterwards resided in Montpellier, and his residence caused disturbances to the inhabitants were at this time extensively engaged in commerce, and had alliances and treaties with Marseille, Nimes, Genoa, Pisa, and other trading towns on the Mediterranean. In 1341 the plague carried off 30,000 of the inhabitants of Narbonne; a law was made which put an end to the inquisition. In 1355 Aymery IX., viscount of Narbonne, defended the place successfully against the attacks of the Black Prince, but was taken prisoner next year at the battle of Maupertuis, or Poitiers. In 1407 Guillaume, or William, viscount of Narbonne, with Narbonne and Sardinia (whither he had been invited by the natives) with the kings of Sicily; he was ultimately however obliged to yield. He was one of the supporters of the Dauphin, afterwards Charles VII.; and took part in the law of Jean, in 1417, by which the city of Narbonne was united to France. (A.D. 1424) in the battle of Verneuil against the English. The viscounty afterwards passed by sale to the counts of Foix. The last viscount was Gaston de Foix, nephew to Louis XII., king of France, who fell in the battle of Ba-
The town is situated upon the Canal Robine de Narbonne, by which a portion of the waters of the Aude flow into the Mediterranean. It is a fortress, but not of the first class, surrounded by an old wall, with several bastions and towers. The early discovery of Narbonne was so great as to distinguish it as Le Bourg and La Ville, between which there is communication by three bridges. Along the bank of the canal is a public walk planted with trees. There are a cathedral and two other churches. The cathedral is a remarkable structure, in Catalan Gothic, and contains the tomb of Pope Urban II., who granted to the town from the 12th to 16th centuries.

The archbishop's palace is a fine building, having much the appearance of a fortress, and is defended by square towers. There are barracks, an arsenal, a military hospital, two prisons, and a convent of Benedictines. The city was 10,097 for the commune; in 1831 it was 9621 for the town, or 10,246 for the whole commune; in 1836 it was 10,792 for the commune, showing a steady but not rapid increase. The town is a port and a market, but the neighbouring marshes render the place unhealthy. The inhabitants make brandy and other distilled spirits, verdigris, bricks, tiles, pottery, and paper, and are engaged in throwing silk, dyeing, and tanning. They carry on trade in corn, red and white wine, brandy, oil, salt, soda, wax, and excellent honey, which is collected in the arrondissements.

There are two yearly fairs. There are marble quarries and salterns near the town. There are several fiscal government offices, an Exchange, a subordinate court of justice, and a college of seminaries, of agriculture, a society of education, a school of hydrography, and a seminary for the priesthood; a museum, a theatre, and public baths. The village of La Nouvelle, at the mouth of the Canal Robine, is the port of Narbonne. The learned Benedictine Montfaucon was at one time with the citizens.

The archbishopric of Narbonne is very ancient: the foundation of the see has been carried on by so far back as the first century of the Christian era. It is now united to the archbishopric of Toulouse.

The town has a population of 581 square miles, and comprehends seventy parishes. It is divided into six parishes or divisions, each under a justice of the peace. The population, in 1821, was 24,101; in 1836 it was 56,965.

NARBOROUGH, SIR JOHN, an English naval commander, was born in the year 1644, and received his education at Westminster School. In 1663, he was appointed to the command of the Royal George. In 1670, he was raised, in 1673, to the rank of rear-admiral, and received the honour of knighthood. In 1674 he was appointed commander-in-chief of a fleet sent to the Mediterranean, for the purpose of overawing the Tripolitans and other piratical corsairs. For his daring exploits, and for the hardihood with which he conducted the naval operations, he was promoted to the rank of admiral, in 1682, which he retained until his death, which occurred towards the close of 1688. (Clarrick, Biographical Navalists; Captain P. P. King, in the London Geographical Journal, vol. i.; and Sir John Narborough's Journal.)

NARBOROUGH, Prince, a British nobleman, and son of the above-named Sir John, was created earl of Grantham in 1832. To prepare this substance opium is to be digested in repeated portions of cold water until the soluble part is dissolved. The mixed solutions are to be evaporated to the consistency of an extract, and when this is treated with boiling water, a brilliant crystalline substance is left, which is the nacronius of the opium; this is to be separated. The clear liquid is then to be heated to ebullition, and ammonia added slightly in excess to precipitate the morphia; expel the excess of ammonia by heat; the liquor being then evaporated to one half of its original quantity, there is obtained, by the addition of water mixed with it, a throw of mononate of barytes; carbonate of ammonia then added precipitates the excess of barytes, and hot expels the superabundant ammoniacal salt. The liquor is again filtered, evaporated to the consistency of a thick syrup, and after being cooled in large leaden vessels, yields a pulp mass which contains crystals; this is to be drained, dried by strong pressure, and digested in boiling alcohol; the solution obtained, when the spirit is distilled, yields a crystalline substance, which, when repeatedly dissolved and recrystallized in a state of purity.

The properties of narcice are, that it crystallizes in colourless acicular four-sided prisms, is inodorous, has a slightly bitter taste, dissolves in 375 times its weight of cold and 230 times its weight of heat, redissolves it, but ather does not. At about 198° it melts, and on cooling it concretes into a white translucent mass, exhibiting appearances of crystallization. At 230° it becomes yellow, and at a higher temperature it is decomposed. It is very soluble in water, and readily forms a red liquid with vegetable bases; when hydrochloric acid diluted with one-third of its weight of water is put into contact with narcice, it becomes of a fine blue colour; but the addition of more water renders its colourless; it may be precipitated from the blue solution by an alkali, with the properties thus changed. The stronger and concentrated acide decompose narcice; the peracids of iron are not rendered blue by this alkali. According to Pelletier's analysis, narcice consists of—

Hydrogen ... 6·52 or nearly 20 equivalents.
Carbon ... 23·79 16 equivalents.
Oxygen ... 34·42 16 equivalents.
Azote ... 4·33 1 equivalent.
NARCISUS is a genus of Endogenae belonging to the natural order Amaryllidaceae, among which it is known by its flowers growing upon a scape, and having a cup at their mouth; the stamens which are opposite the sepals being longer than the others. It consists of bulbous plants primarily inhabiting the warmer parts of Europe, only one species, N. autumnalis, or the fall Daffodil, having been found plentifully so far north as Great Britain, with two others, N. biflorus and poeticus, in an apparently wild state, and a very few advancing into Africa.

The species are numerous, and from their hardness or gas are able to thrive in most ground, have been favorite objects of cultivation, especially the Daffodils, Jonquils, and Tazettas. A very full account of them will be found in the "Amaryllidaceae" of the Honourable and Reverend William Herbert, p. 292 (Edo., London, 1837), who however divides the genus into six species, after the example of Salisbury and Haworth; but as those genera are not likely to be adopted by botanists, with the exception perhaps of the gener Corbula, no account need be given of them.

With regard to Corbulae, to which the name of Hoop-pettos is given to them which five supposed species are enumerated, the peculiar form of the flower and the delicate stamens of that plant may perhaps entitle it to be regarded as a peculiar genus: the species are pretty, all are odoriferous, with the single exception of C. cantabrica, a little plant which grows on the mountains of Biscay and the Pyrenees, but now lost in our gardens.

NARCOTICS (from the Greek adjective narkētikós, which is from narkē, a stiftening, stupe, or insensibility), a class which may be comprehended under moderate doses, cause a temporary increase of the action of the nervous and also of the vascular system, followed more or less speedily by a marked diminution of this action, terminating generally in sleep. When the dose is large, the excitement is scarcely perceptible, while the diminished power of the nervous system is so manifest, that an appearance of coma or apoplexy is induced. All the agents included in this class are capable of producing a state termed narcosis, or narcotism, which, if not quickly removed by a narcotic, is soon followed by their influence, and the animal may terminate in death. Many of them are therefore as familiarly known as poisons as therapeutic agents. It is the consideration of them however in this latter quality which is to be entered on in this place. Their power of inducing sleep has procured for them the title of hypnotics, or soporifics; and the property which many of them possess of alleviating pain, by blunting the sensibility, has obtained for them the appellation of analgesics [Aνodyνες], or, from one or other of being known among them, simply of opiates.

The most important consideration in the circumference of their depressing action being always preceded by a stimulant. This peculiarity renders their employment difficult in some cases and improper in others. The distinction is thus distinguished, that on the one hand, and from sedatives on the other; and the distinction is the more necessary, because in nature the narcotic principle is generally combined with one other of these: hence the contradictory and unsatisfactory reports of the value of different narcotic remedies, and the difficulty experienced in their application by those who do not know the reason why opium suits one case, hyoscymus another. (Billing's First Principles of Medicine, 3rd ed.). The progress of chemistry, by isolating the various active principles of the same nature and kind, has removed the difficulty attendant on their administration; still, as no one can be said to act in a manner precisely similar to another, a correct knowledge of each is desirable in order to ensure the selection of that which is best suited to the case. Do not however in their nature have a common property that, they all make a direct impression on the extremities of the nerves (to whatever part of the body, with few exceptions, they are applied); but their specific effects are more or less immutable till they are absorbed, and mingled with the circulating fluid. A slight glance at their action on the different systems of the body will furnish a useful guide in their administration. A full dose of a narcotic introduced into the stomach will, if that organ be empty, destroy the desire for food, while, if it contain food, the digestive process is suspended or rendered slower. Their frequent continued use is therefore very injurious to that function, on which all the others depend, viz. nutrition; as is displayed in the persons of opium-eaters of the East. Further, should any considerable irritative or subacure inflammatory condition of the mucous coat of the stomach exist, they cause an aggravation of the febrile symptoms, and either in common or dangerous ulceration of that organ they cause great uneasiness. Though their primary effect on the vascular system be stimulating, and afterwards sedative, and of no apparent use to the brain (probably the source of their soporific property), their secondary effect is depressing; and in this the respiratory organs participate. This is at once a source of utility and of danger, for by moderating the action of the heart and lungs, the circulation is reduced in cases of most inflammatory complaints; but when pushed too far, the blood is not sufficiently aerated, and partaking too much of the nature of venous blood, it does not prove a sufficient stimulus to the brain and other organs.

The action upon the secreted system is not very uniform, nor are all writers agreed as to its nature. Opium generally checks most of the secretions, except that of the skin, and causes heat, thirst, and constipation. Hyoscymus rarely causes any of these states, but on the contrary

Lastly, some of them possess greater influence over one set of nerves than the other, and extend their energy on the muscular, as well as on the cutaneous secretions without interfering with the secretions of the mouth, or otherwise. No set of medicines have their action more modified by a variety of circumstances—such as the quantity given, or the frequency of repetition, also the force of habit, climate, or season, but above all by idiosyncrasy. Age also has an important share. It is incapable of the artificial maintenance of the vital strength; and it is not only from the action of age, but the removal of the secretions, the practicability of the effect of the medicine in the different species of disease, and the other medicines being employed, that certain medicines are proved to be the most efficacious in certain cases. The dose of a medicine is that which is found to be most efficacious in a given case.

In case of over-dose or accidental poisoning, the following observations may be useful. The stomach being rendered insensible to the irritation of emetics, these are generally useless and much valuable time is lost by administering them. An emetic, either by being converted into a solution of zinc (white vitriol) dissolved in water, or a table-spoonful of flour of mustard diffused through a pint of warm water, may be given, accompanied with pressure on the pit of the stomach, or at the same time by gently boiling the patient. Neither ipecacuan nor tartar emetic should be used; the latter is particularly unfruitful. (Belladonna). The stomach-pump is the surest means of emptying the stomach, and should be used as soon as possible. If the brain appear much oppressed, the countenance flushed, and the pulse full, moderate blood-letting will be serviceable, especially if artificial respiration be subsequently employed. When the water brought up by the stomach-pump is clear and devoid of any smell of the poison, which will prove that all the medicine or poison has been got through, a dose of vinegar may be given to the patient, who should also be kept moving about, and not suffered, if possible, to sink into a state of aldermer. Coffee is a very useful beverage, and still more a drink made by boiling twelve ounces of vinegar, four ounces of water, and one ounce of yeast, together with ground coffee, or by boiling the coffee in the vinegar, straining it, then adding half an ounce of sugar, and giving it in small quantities to the patient every quarter or half hour. This can be prepared while the stomach-pump is being used. The most effectual means of acting upon the central nervous principle. Vinegar given while any of the poisonous substance is in the stomach only increases its deleterious property. (Antidotes). See Pereira's Mater media, p. 66, and Christison On Poisons.

NAROTINA, one of the peculiar and alkaline principles of opium which was discovered by Derosne about 1848: its true nature and alkaline properties were however first
NARCOTINE. [PAPAYER.]

NARDI, JA'COPO, born at Florence in 1476, served first in the troops of the republic, and afterwards in a civil capacity. He was sent in 1527 as ambassador to Venice. He died at a very advanced age, after the fall of the republic. He wrote 'Storia della Città di Firenze dell' anno 1494 al 1531,' published at Lyons in France, 4to., 1582: another edition was prefixed, 1599, whereof the presents were which were exhibited in both editions, but especially that of Florence, on account of the political feelings of the author, are found in the MSS. in the libraries of Strozzi of Florence and Nani of Venice. Nardi was warmly attached to the republican constitution of his country, of which he witnessed and described the overthrow, whilst his contemporary Neri, who composed a general history of Florence including the same period ('Commentari dei Fatti Civil eccorsi in Firenze dall' anno 1212 all' anno 1537,' fol., Augsburg, 1610; another edition was prefixed, 1611) and was a Jacobin, and accepted office under the grand-duke Cosimo I. The history of Nardi forms a sequel to that of Machiavelli, which ends with the death of Lorenzo the Magnificent in 1492, and the two together form a complete history of the Florentine republic from its rise till the overthrow of its independence.

Nardi wrote also 'Vita di Antonio Giacominii,' 4to., 1597. Giacominii was one of the most distinguished captains of the Florentine republic. He was also the author of an Italian translation of Livy, and ascribed to him, 'L'Amicizia,' one of the earliest comedies in Italian verse.

NARDUS. [SPIKENARD.]

NARES, JAMES, Mus. Doc., was born at Stanwell in Middlesex, in 1715, and received his musical education first as a chorister in the King's Chapel, under Bernard Gates, and afterwards under the celebrated Dr. Pepusch. At an early age he was chosen organist of the cathedral of York, and in 1736 was appointed organist and composer to George II. on the decease of Dr. Greene; and about the same time the donor of the Dick Fund entrusted to him the University of Cambridge. In 1757 he succeeded Mr. Gates as master of the children of the Chapels-Royal, which office he held till 1780, when declining health induced him to resign; and he resided at York till his death. He died in 1783, 'regrett'd,' says his eldest son, the late Archdeacon Nares, 'not only by the family he left, but in a proportionate degree by all related to or connected with him.' Among these were his younger brother, Sir George Nares, one of the judges of the Court of Common Pleas, and his nephew, the Rev. Edward Nares, D.D., author of the 'Life and Administration of Cecil, lord Burleigh;' also of Sermons and other works.

Dr. Nares published several musical works, the most important of which are: Twenty Anthems in Score, composed for the use of the Chapels-Royal; and the present Anthems are used in every cathedral in England and Ireland; 'A Collection of Catches, Canons, and Gloses,' dedicated to the Earl of Mornington, including the prize-glee, 'To all lovers of harmony, and to all lovers of the Sun; or, A Treatise on Singing,' with a set of English duets; and 'The Royal Pastorl, a Dramatic Ode.' After his death a second set of anthems, six in number, together with his popular Service, were, as had directed, published by his son; and though they do not obtain the same reputation, a number of them are still sung by choirs, and are held in beautiful air as well as in harmony, not elaborate, but of the purest kind; and his judgment in setting our Liturgy has been equalled by few, exceeded by none; for his natural good sense and cultivated understanding led him not only to the true Church, but also to the true Church composers who preceded him, but also qualified him to become the guide of those who followed and had discernment and wisdom enough to profit by his examples.

NARNI, a town of the Papal State, in the fine valley of the Nera, an affluent of the Tiber, in the ancient provinc of Spoleto i Rieti, is situated on a hill which forms part of the mountains of Sabina, is a bishop's see, and has about 2500 inhabitants. (Calmbri, Saggio Statistico della Stato Italiana.) It is an ill-built old-looking town; but it has several churches and a Romanesque cathedral, and in the neighbourhood are the remains of a very handsome bridge on the Nera, the antient Nar, said to have been built by Augustus. The antient Nequinum, a strong town of the Umbri, which stood on the present site of Narni, was taken by the Romans, 299 a.C., a Latin colony was sent there, which assumed the name of Narnia, from the neighbouring river. (Livy, x. 9, 10.) Narnia was one of the twelve Latin colonies which, after the battle of Caudine, refused to give any further assistance to Rome. (Livy, xvi. 19, 15.)

NARRAGANSET BAY. [RHODE ISLAND.]

NARROWS, The. [NEW YORK.]

NARSES, the name of a eunuch who became one of the most successful generals of the emperor Justinian, and rivalled Belisarius in his military triumphs. His origin and parentage are unknown. He was probably by birth an Asiatic, esculacuted, and sold, according to the old barbarous custom of that part of the world, and employed in the traffic in men where the young boys of Constantinople. His natural abilities and insinuating manners attracted the attention of Justinian, who had certainly the tact of discerning merit in those about him. Justinian employed Narces about his person, and raised him to the highest commands, to the command of a body of troops which were sent to Italy to act under Belisarius. [BELISARIUS.] The two generals acted in concert at first, and obliged the Goths to raise the siege of Ariminum; but they soon quarrelled, and Narces, who was supposed to have acted for himself: the consequence was, that Belisarius was censured in his operations, and meanwhile the Goths and Burgundians took and ravaged Milan. (Procopius, De Aedificiis, vi. 21.) Justinian recalled Narces, who resided at his places at the imperial court. Several years after, Belisarius having been recalled from Italy, the state of that country fell again into utter confusion: the Goths under Totila overran the whole country; and at the request of the emperor, a vast army was assembled at Aquileia, to prevent the total loss of Italy, fell ill in Dalmatia and died. In the year 592, Justinian determined to make a last effort; he appointed Narces commander-in-chief of the Italian expedition, and supplied him with a large number of auxiliaries, Heruli, Longobardi, Gepide, and others, whom he united with the army of Germanus, and assembled them all near Salona. Not having sufficient vessels...
N. lat. and 28° 16' E. long., on the west bank of the river Narva, which comes from Lake Peipus and falls into the Gulf of Finland about ten miles below the town. It is surrounded with a rampart, and in the suburb Ivangorod, on the other side of the river, there are the remains of a large fortress built by the czar Ivan Wassiliewitsch. Narva is divided into the old and new town, which are separated by a rampart. The houses are well built of brick, and stuccc'd white. There are 7 stone and 2 wooden Greek churches, and 2 stone Lutheran churches, an Exchange, and a good German school. The inhabitants, about 4500 in number, are for the most part of German descent, and Narva looks more like a German than a Russian town. It was a member of the Hanseatic League, and has still a very considerable export trade in barks, planks, flax, hemp, corn, and furs. The fishery in the Baltic is very productive, and the lampreys and smoked salmon of Narva are celebrated. About 160 merchantmen, chiefly in ballast (the imports being much less than the exports), arrive every year, and can come up to the town; but the barks which come down the Narova from Lake Peipus are unloaded about a mile from the town, at the island of Krangholm, where there is a fall in the river about twelve feet perpendicular.

Narva was built in the year 1213 by King Waldemar, taken in 1553 by the grand-duke Ivan Wassiliewitsch, and re-taken by the Swedes in 1581. In 1590 and 1658 it was besieged by the Russians. On the 30th November, 1700, King Charles XII., with 8200 Swedes, totally defeated 80,000 Russians under Peter the Great and the duke of Croy, and stormed their intrenched camp near the town. In 1704 however Peter the Great took it by storm, and it has ever since remained in the possession of Russia.

NARWHAL, (Whales.)

NASALIS, M. Geoffroy's name for a remarkable genus of Monkeys established on the 'Guenon à long nez' of Buffon, the Proboscis Monkey of Shaw, Simia Nasica of Schrebct, Nasalis larvatus of Geoffroy, The Kakaie.

Organization and History.

The enormous development of the nose in the Kakaie is not dependent on bone. The nasal bones are no more elevated than they are in the rest of the Simiade, as will be perceived from the following cut of the skull of a Proboscis Monkey in the museum of the Zoological Society of London.

The figure given below was reduced from the drawing of a female, when newly taken from the cask of spirit in which the body was preserved: the specimen came from Borneo, and is now to be seen, but with the nose deteriorated by drying, in the museum of that Society. It was
said that the animal has the power of dilating this organ to an enormous size by inflation.

Audebert gives the following view of the nose, as seen from beneath.

In July, 1837, Mr. Martin laid before the Zoological Society the following observations on this Monkey:

The genus Nasalis, of which the "Guenon à long nez" of Buffon (Streptus, vii) or Proboscis Monkey of Shaw, is the type, was founded by Geoffroy St. Hilaire in his "Tableau des Quadrupèdes," published in the "Annales du Muséum d'Histoire Naturelle," for 1812. In this outline of the Swamp the genera Semnopithecus and Cercopithecus are blended together and under the latter title; but from this genus are excluded two Monkeys, the Douc, constituting the type of the genus Pygathrix (Lasiozyga, Ill) and the "Guenon à long nez." With respect to the genus Pygathrix or Lasiozyga, founded upon the alleged want of callousness, most naturalists believe favor of the error committed both by Geoffroy and Illiger, in describing from an imperfect skin, have regarded it as merging into the genus Semnopithecus, at least provisionally, until the internal anatomy of its supposed generic characters, was ascertained.

The characters of the genus Nasalis, formed for the reception of the "Guenon à long nez" (Simia Nasalis, Schreb.; Cercopithecus larvatus, Wurmb), are laid down as follows:

1. A short, forehead projecting, but little elevated, facial angle 50°; nose prominent and extremely elongated; size small and round; body stout; cheek pouches; anterior hands, with four long fingers and a short thumb, ending the index-finger begins; posterior hands very large, with fingers, except the thumb; all elongated; tail longer than the body.

2. At a subsequent period, however, in his "Cours de l'Histoire Naturelle," published in 1828, Geoffroy, adopting the genus Semnopithecus, established by Freycinet, places the "Guenon à long nez" within its limits, and it is true, and with the acknowledgment that his genus Nasalis has not been generally adopted, but at the same time with a bias in its favor; for, observing that the manners of these Monkeys are those of the Semnopithecus, he adds, "It would seem that this particular species, under the title of Nasalis, in its particular character is not abrupt; even were it so, an isolated point of this nature does not form a philosophical basis upon which to proceed to such a conclusion." It is true; and it is not a conclusion that would have been reached by Mr. Geoffroy, frequently referred the proportions of this part of the face are much diminished, and its form also modified. This species (which, though doubted by some as being distinct, is, we believe, truly) takes an intermediate station between the Simia Nasalis and the ordinary Semnopithecus with flat nose; hereby showing that the transition in this particular character is not abrupt; even were it so, an isolated point of this nature does not form a philosophical basis upon which to conclude.

So far I have alluded to external characters only; it remains for me to give some account of the anatomical characters of this singular Monkey, of which, as far as I can learn, modern naturalists do not appear to be aware.

It would seem that M. Otto, who described the sacculated form of the stomach in one of the Monkeys of the genus Semnopithecus, is not the first observer of this peculiarity, for I find that Wurmb, in the "Mémoires de l'Academie des Sciences," 1812, gives the term in the anatomy of an individual of the Simia Nasalis. After giving some interesting details respecting the habit and manners of the species, he proceeds as follows:— "The brain resembles that of man; the lungs are of a snow-white colour; the heart is covered with fat, and in this fat is found. The stomach is extraordinarily large, and of an irregular form; and there is beneath the skin a sac which extends from the lower jaw to the clavicles." Audebert (with whose work, "Histoire des Singes," Geoffroy St. Hilaire was well acquainted, and perhaps knew of Wurmb; yet Geoffroy does not, as far as I can find, advert to these points, unless indeed his statement of the presence of cheek-pouches be founded on the observation of a sac extending from the lower jaw to the clavicles; and if so, he has made a singular misstatement, as no cheek-pouches are present in a Proboscis Monkey; yet Geoffroy gives us no general statements in any of his works as to their occurrence, and his conclusions are based on general observation and comparison, not on particular cases; neither does he state that he believes the same thing to be the case in any other species, or that he has ever observed it anywhere. It is evident however, from the silence of M. Geoffroy St. Hilaire respecting the laryngeal sacculus in the Proboscis Monkey, that he was not aware of the real character of the structure to which Wurmb alluded. With respect to the laryngeal sacculus of the Proboscis Monkey, M. Otto drew any general inferences from it; they described it as it presented itself in single species, and regarded it in an isolated point of view; it is, if I mistake not, to Mr. Owen that we owe our reception as an anatomical character of the Proboscis Monkey; but that part of the paper on the subject, in the Proceedings for 1833, and in the Transactions of the Zoological Society.

"This is perhaps scarcely the place in which to introduce any specifications, but I cannot help observing that the same structure may be found in the genus Colobus, in which form is a mere repetition of the genus Semnopithecus, except that the thumb of the fore-hands, which in the latter begins to assume a rudimentary character, is in the former reduced to its lowest stage of development. In both genera the teeth precisely agree, and present early that worn surface which is the consequence of a continued grinding rodent-like action upon the leaves and herbaceous matter which constitute the chief diet of the animals.

The statement of Wurmb respecting the stomach and laryngeal apparatus of the Proboscis Monkey I have lately been enabled to confirm.

Among the specimens in store brought within the last few months from the Gardens to the Museum occurred an example of the Proboscis Monkey, in which the peculiar condition of decomposition which induced me to lose no time in making such an examination as its condition would admit, being indeed extremely anxious to ascertain the relationship of this curious Monkey to the other groups of Indian Simia, groups to which I have been lately directing my attention.

The specimen in question was a female, measuring, from the vertex to the ischiatic callousities, one foot nine inches.

The body was meagre and slender, and the limbs long and slim; the contour of the animal being very unlike that displayed in the mounted specimen in the Museum of the Society, which gives the idea of great robustness.

The abdominal cavity had at some former period been opened and the liver removed, in doing which the skin had been cut, but not to the extent of removing its muscular investment; the proportions of this part of the face are much diminished, and its form also modified. This species (which, though doubted by some as being distinct, is, we believe, truly) takes an intermediate station between the Simia Nasalis and the ordinary Semnopithecus with flat nose; hereby showing that the transition in this particular character is not abrupt; even were it so, an isolated point of this nature does not form a philosophical basis upon which to conclude.

In every essential point this riuscus is the same as in all the Semnopithecus hitherto examined: it consists of a large cardiac pouch, with a strong muscular band running as it were around it so as to divide it into the upper and lower, and the lower one separated from the upper by a sacculus; the cardiac apex of the upper pouch projects as a distinct sacculus of an oval form, and is not bidental. From this upper pouch runs a long and gradually narrowing pyloric portion, connected into a sacculus by a muscular layer, which one is continued from the band dividing the cardiac pouch into two compartments. The elongated pyloric portion sweeps around the lower cardiac pouch.

The esophagus enters the first compartment about four inches from its terminal apex, giving off a radiation of longitudinal muscular fibres over the central portion of the first compartment. The second or lower compartment is the largest and deepest, and is embraced by longitudinal..."
muscular fibres from the oesophagus to the division-band, but, unlike the same compartment in the stomach of the Semonmphonius Entellus, it is very slightly succulated; indeed it can scarcely be said to be so at all. The admeasurements are as follow:—

\[
\text{inches.} \quad \text{ft. inches.}
\]

1st compartment, round the greater curve \( 1 \frac{1}{8} \)

2nd compartment, measured in the same manner \( 1 \frac{1}{8} \)

From the entrance of the oesophagus, round the 2nd compartment, to the division-band \( 1 \frac{1}{1} \)

The same measurement, round the 1st compartment \( 0 \frac{1}{8} \)

Length of pyloric portion \( 2 \frac{1}{8} \)

Circumference at base \( 0 \frac{1}{9} \)

Circumference just above pyloric orifice \( 0 \frac{1}{7} \)

Length of small intestines \( 18 \frac{1}{8} \)

Length of large intestines \( 6 \frac{2}{3} \)

The average diameter of the small intestines, lying flat, was \( \frac{1}{4} \) of an inch; the ileum however was rather more, but not quite an inch.

The caecum is of a pyramidal figure, \( 5 \) inches in length, pointed, and somewhat succulated by three slight muscular bands. Circumference at the base, \( 4 \) inches.

The large intestines are puckered into sacculi by two longitudinal bands; they commence large, becoming gradually smaller, the bands in the mean time gradually disappearing. Advancing towards the rectum the intestine again enlarges; and here, to the extent of \( 2 \frac{1}{2} \) feet from the anus, all trace of bands is lost.

The circumference of the large intestines, at their commencement, is \( 3 \frac{1}{4} \) inches.

The lungs consisted of two lobes on each side, the fissure dividing the lobes on the right side being the most complete.

The laryngeal sac was of enormous size, and single. It extended over the whole of the throat, and advanced below the clavicles, communicating by means of a single but large opening with the larynx. This opening is on the left side between the larynx and the os hyoides, and is capable of being closed by means of a muscle arising from the anterior apex of the os hyoides, and running down the central aspect of the trachea to the sternum. The contraction of this muscle draws the os hyoides down, so as to press upon the edge of the thyroid cartilage.

There were no cheek-pouches, nor any traces of them.

The teeth were much worn, but the fifth tubercle of the last molar tooth of the lower jaw was very distinct. (Zool. Proc., 1857.)

The Kahau. (Audebert.)

Description.—Reddish brown, except the light coloured tail, lower part of the back, and some light-coloured markings on the arms. Height about three feet, when nearly erect. Female rather less, and destitute of the light markings on the back, &c. Nose and face darkish brown.

Geographical Distribution, Habits, &c.—This species is a native of Borneo. Their habits are gregarious, and they are said to collect in great troops upon the trees bordering the rivers at sunrise, darting from tree to tree with great activity, sometimes springing a distance of fifteen feet. Their name, Kahau, is supposed to be given to them from their continued cries, which are considered as peculiar in their expression. Their disposition is said to be bold. M. Lesson notices the 'on dit' that the species is also a native of Cochin China; but he gives no authority for this locality.

Mr. Vigors and Dr. Horsfield, in their paper 'On the Mamalania in the Zoological Museum,' after noticing the species above described, mention another form, of which two specimens, almost equally distinguished by the extension of the nose, but having that member turned up instead of being recumbent, brought a few days later in the same collection. This is the form alluded to above by Mr. Martin, and is thus characterised by Mr. Vigors and Dr. Horsfield, under the name of Nasalis recurvus. It is to be remarked that they were also preserved in spirit, and consequently were not subject to the same contraction of the soft parts of the nose as might have occurred in dried skins:

Description.—Head, neck, shoulders, and thighs rufous above; abdomen paler; middle of the back reddish grey; inside of arms and thighs, lower part of the back, and tail, grey; tail below, white. Size about one-third less than the Kahau.

Mr. Vigors and Dr. Horsfield observe that the general colour and markings of this animal correspond with those of the Kahau. The skin of the face however, they remark, is reddish in N. recurvus, where in the other species it is black. In N. recurvus, they add, the beard is very prominent; but in the Kahau the hairs on the chin scarcely assume the appearance of a beard.

Profile of N. recurvus.

Mr. Vigors and Dr. Horsfield state that it has been suggested that this may be the young of the Kahau; but they state that they cannot allow themselves to come to the conclusion that they are the same, with so great a disproportion of the facial angles, in the absence of some stronger grounds than mere conjecture. Its teeth, they remark, showed no signs of being otherwise than adult.

South America appears to agree with Mr. Vigors and Dr. Horsfield and Mr. Martin, in considering N. recurvus distinct; for he gives the number of species of Nasalis as two. (Natural Hist. and Classification of Quadrupeds.)

NASAMONEs (Naasamones), a barbarous people in Linsa, who dwelt on the coasts of the Greater States. According to Strabo they were bounded on the west by the Psylli, and extended westward as far as the Philines. Their Altars, which were at the southern extremity of the Great Syria (XVII, p. 816, 838, Casaubon). Herodotus places them farther to the west, and states that they occupied the country of the Psylli (iv. 173). On the coast they extended beyond the Syntis, and were bounded by the Auschiae, a small tribe, who dwelt to the west of the Cyrenaica (Herod., ii. 32; iv. 172). Inland they had dominion as far as the coast of Angiia, in the great desert of Barea, which is 150 miles south-east of Barea, and is at present the day one of the resting-places of the caravans which trade between Cairo and Fezzan. (Angilla.) The Nasamones were accustomed to leave their cattle on the coast in the summer season, and to Angilis to gather dates (Herod., iv. 172). Pliny (v. 3) also places the Nasamones on the Syntis, and says that they were antiently called Tesamones by the Greeks, because they were situated between two quicksands (spec. quae); missing perhaps the two Syntes, which however is not the case.
The Nasamones are described by Herodotus (iv. 172, 173) as a numerous nomadic people, who had a community of wives, were accustomed to swear by the tombs of the bravest and justest of their ancestors, and pledged their faith by drinking out of the hands of one another, or by licking dust out of one another's hands, if they had no water.

They are described by Lucan (Phars. ix. 404) and Q. Curtius (iv. 7) as a barbarous tribe, who lived by the plunder of the vessels wrecked on their coast. Bruce, who was wrecked on this coast, found that the present inhabitants followed the same practice. (Rennell's Geography of Herod., ii. p. 271.)

The survivors were driven into the interior of the country by the Romans in the time of Domitian. (Diom. Perig. ed. Hudson, iv. 208; Eusebi Chron. Ol. centvi; Joseph., Bell. Jud., ii. 16, § 4.) Polemy places them as far inland as Mount Hymettus.

Herodotus gives (ii. 32) an interesting account of an exploring expedition, undertaken by five young men of this country, who crossed the great Libyan desert, and, after traversing extensive marshes, came to a large river flowing from west to east, with crocodiles in it, which many commentators have supposed to be the Niger. [Niger] NASCENT STATE, a term proposed by Dr. T. Brightlesby to express the moment at which a gaseous body is liberated from previous combination and before it has assumed the greatest part of its gaseous state. There are some bite that state and occasioning chemical combination, which could not occur without it. If, for example, azotic and hydrogen gases be mixed in any proportions whatever, and be subjected either to heat or electricity, which are so efficacious in causing many urchins to enter into the state of the style of combination, and consequently no ammonia is formed. If however we decompose nitric acid and water by means of tin, the azote of one and the hydrogen of the other come into contact in their nascent state, and before they have even assumed the form of gases, and they enter into the state of combination, the most striking examples of similar action might be adduced, but no one more strikingly exemplifies the meaning of the term and the efficacy of the action which it is intended to describe.

NASEBY. CHARLES 1. In 1643, Naseby was born in the year 1558, at Lowestoft, in Suffolk, and closed a calamitous life of authorship in his forty-third year. Dr. Beloe has given a list of his works, and Mr. D'Israeli an account of his privations and sufferings. As a wit and a satirist, he seems to have been successful. Naseby died in 1676, aged about fifty years, as a poet, much below most of them. He has left only one dramatic performance entirely of his own composition, 'Summer's Last Will and Testament,' which is not to be regarded so much in the light of a play as of a spectacle. It was not performed by the joint venture of a company of players in 1601, but probably at the close of the autumn of the year 1592, but not printed till eight years afterwards. Naseby was concerned with Marlow in writing 'Dido, Queen of Carthage,' 1594, which was also acted before the queen by the chamberlains of the court. He had a vivid understanding, well stored with learning, and was capable of giving powerful descriptions of things and striking characters of persons, as will be found by his 'Supplication of Pierce Pinnless to the Devil,' 1592; this latter work was followed, though with less effect, by his 'Christ's Tears over Jerusalem,' 1593. 'Summer's Last Will and Testament' has been reprinted in the latest edition of Dodsley's 'Old Plays.' It has no pretention to diversity of character in the persons, nor to interest in the plot. An old play of that sort has no piquancy, and the individuality being that of Will Summers (or Sommers), the jester of Henry VIII., the piece depends upon a sort of pun between the name of the jester and the division of the year which corresponds with that name.

NASH, JOHN, was born in 1572, and is said to have been of Welsh extraction, but few particulars are known of his early life, or when he first began to apply himself to architecture as a profession, previously to which he followed portrait, or rather miniature painting. Perhaps it was in an evil hour for architecture, that he devoted himself to it as practitioner; for though he thereby acquired a popular reputation for himself, as the author or promoter of the very extensive improvements in the metropolis, arising out of the formation of Regent Street and the Regent's Park, the taste there displayed most certainly has not contributed to raise our national character in regard to architecture, but has rather tended to bring into vogue a sketchy, showy, and meretricious style, wherein, though richness is affected, poverty and meanness are the prevailing qualities. Notwithstanding all their pretension and finery, the terraces in the Regent's Park have more the look of barracks than of palaces;—are mere stretched-out ranges of common place houses, garnished with columns and pilasters, inspired enough in the people themselves, and, in their design, in the very pallidly, offensively. It has been said that for the bad taste of many of the designs both in Regent Street and the Park, he is not answerable, they being the productions of the different architects, or rather builders, who created them; but it is quite possible that such a conclusion as this is less than the surveyor employed on that occasion, it is no excuse whatever for the paltry taste of his own designs, which, so far from being decidedly superior to all the rest, exhibit the best of the very common specimens among them. Neither is he at all entitled to the original claim made for him as having set a new fashion in street architecture, by combining several houses into one façade, since the same thing had been done about a century before by Wood of Bath. Whatever allowance however may be made for works of that class, we may fairly take Buckingham Palace as proof of his talent; and that costly structure is a decided and most deplorable architectural failure; hardly at all superior in style and quality to the average of the designs above referred to. Here and there are generalities, but not enough. The best that he can boast is that he fitted the slightest approach to grandeur or to real architectural taste; neither is there any redeeming point in the general conception. In the Pavilion at Brighton he succeeded better, although it is but a poor and shabby imitation of the archways of Charles the Second; he seems to have tried at least to give any study to detail, but to have contented himself with the mere generalities of form. The United Service Club-house, the Haymarket Theatre, and the Terraces in St. James's Park, and indeed almost all his works, suffer much from the design in them of being more than a very commonplace sort of fertility. The entrance to the Queen's Mews, another of his works, is remarkable only for its barbarous ugliness.

Mr. Nash died at his villa near East Cowes in the Isle of Wight, May 13, 1652, in his sixty-third year, and is said to have left very little property, notwithstanding the vast sums of money he had derived from his profession.

NASIR-ED-DIN, MOHAMMED BEN HUSSEIN AL THUSSI, a Persian and an astronomer, who died in 1168, aged about seventy, was born at Jerusalem, from Al Mutassem, the caliph, he left his country and went into Tartary. Here he obtained the friendship of Hulaku (commonly written Holagou), a great conqueror, and the brother of the reigning prince. It is said that Hulaku, being on an expedition against the Christians, was deterred by Nasir-ed-din, and induced to proffer an invasion of Persia. D'Herbelot treats this as a fiction, so far as the astronomer is concerned; but whether this be so or not, Hulaku overran Persia a second time, and was defeated by his own people. He then retired to Persia, and was killed by his son, who succeeded him on the throne of the Moghuls. Nasir-ed-din, who was a man of science, built an observatory, and placed Nasir-ed-din at the head of both. The instruments there used are described by Delambre, from an Arab manuscript, in the 'Hist. de l'Astron. du Moyen Âge,' page 191. The tables made at this observatory are called the Ithibar Tables, from the name of their author's patron. They enjoyed great reputation in the East, and are known in Europe from the Synopsis Tabula. Astron. Persicorum' of George Chrissiocrate, printed by the Hollanders, in 1644, and the Commentary of a Persian, whose Latinized name is Siah Cholgius, printed by Greaves, in 1642. The Ithibar Tables, according to Delambre, differ from those of Ptolemy only in the correction of some of the mean motions.

Nasir-ed-din also composed a work on geography, which was printed by Greaves in 1652, and which we believe was long the authority for many Asiatic longitudes and latitudes; also a work on ethics, and several other writings.

NASSA. [Etymology of place names.] 1055.

NASSA or POOGY ISLANDS, those form a part of a chain of islands which lie off the whole length of the west coast of Sumatra, at a distance of 60 or 50 miles. There are two islands which bear this name: they lie between 2° 30' and 3° 15' lat. and are separated from each other by a strait called Si-kakap, which is about two miles long and a quarter of a mile across. This strait...
forms an excellent harbour for ships of any size. It is surrounded by mountains, so that the water is literally as smooth as in a pool; and there are twenty-five fathoms of water close inshore, and forty-five in the mid-channel. There are also some high rocks in the strait. The surface of the islands is rough and irregular, consisting of high hills or mountains of sudden and steep ascents. The mountains are covered to their summits with trees, mostly evergreen and very excellent timber. The sago-tree grows in abundance, and affords the chief article of food to the inhabitants, who cultivate no rice. The cocoa-nut tree and the bamboo also abound. The fruits common in the islands of the Indian archipelago, such as mangosteens, plantains, etc., are cultivated in different forms. The natives here, in their natural disposition are impervious to man, and harbour various wild animals, as deer, hogs, and several kinds of monkeys. Fowl and pigs are raised, and fish are plentiful.

The inhabitants of these islands are few in number; they are the descendants of the original inhabitants, and are nearly 4,000, living in one village. On the Northern Peggy there are seven villages, and on the southern five. The population amounted in 1792 to about 1,400 individuals. In colour and stature they resemble the Malays, but they speak a language quite different from those used on the coast of Sumatra. There is some resemblance between them and the inhabitants of the islands of the Pacific in their practice of tattooing their body. They are still strangers to the use of the wheel and the plough. A sort of gourd is hereby standard for the value of various commodities among them. They neither export nor import any article. Some Malays have settled among them for the purpose of building large barns, timber for which is found close at hand. (Crip, in Scientific Researches, vol. vi.)

NASSAU. (Bahamas.)

NASSAU, THE DUCHY OF, derives its name from the mountain castle of Nassau, the original seat of the Nassau family, of which only the ruins now remain, near the city of Nassau. The extensive tracts of land and territories have undergone numberless changes in consequence of partitions, re-unions, cessions, and acquisitions. It is at present composed of 23 different territories, including all those which formerly belonged to the several branches of the Nassau family, and comprised between 5° 47' and 8° 46' N. lat. and 7° 31' 30' and 8° 45' E. long., and is bounded by the Prussian Rhénish provinces and by the different states of Hesse. The area is variously stated, 2,226 square miles being the highest and 1743 the lowest estimate. According to the latest estimate, it seems to be about 666 square miles. The Duchy is divided into three provinces, Westbaden, Weilburg, and Dillenburg, and subdivided into 28 bailiwicks. There are no large towns, Westbaden having only 9000 and Biberach 3500 inhabitants. The country is generally mountainous and pastoral, and there is no part of it that is level. The mountains follow the Rhine and the Lahn in their whole course through the duchy, and form delightful valleys, which are among the most romantic parts of Germany; the most picturesque is the Rheingau from Biberach to Lorch-bach. The natural stoneworks, both of stone and of various and valuable, is protected by the Taunus from the north wind, and bounded on the south by the Rhine. There are two principal chains of mountains; on the north the wild and wooded Westerwald, and on the south east the Taunus or the Höhe, the most elevated is the Hochkasten, 2400 feet above the level of the sea. The climate is on the whole temperate and healthy; it is mildest in the parts about the Main; on the highest summits of the Taunus and on the surrounding hills, it is much the coldest. On the north the Lahn is the chief of the rivers, which bounds the duchy on the south west, and at Lahnstein receives the Lahn, which is navigable 14 leagues from its junction with the Rhine at Wiesbaden. The Main forms the boundary to the north east of the Duchy, and there are several important streams, such as the Emms, Aar, Sieg, Wiesbach, Wollbach, and Nister. There are no canals and no lakes. On the other hand the country has numerous Spas and mineral springs, which are among the most celebrated in Germany; of the former we may mention Emms, Wiesbaden, Langenfeld, Schwabach, and Schlangenbad, which are annually frequented by about 10,000 visitors; and of the latter Nieder-Selters, Farben, and Gellenau, from which about three millions of bottles are annually exported, of which 22 millions are Seltenwaters, the natural stoneworks, both of stone and of various and valuable. Though the farmers are very industrious, the corn raised is in general not sufficient for the consumption of the country.

The fertile bailliwick of Hochst is indeed a granary to the city of Frankfort, and considerable quantities of the finest grist and eye grown on the banks of the Lahn are exported by means of the latter river; the wheat is of such superior quality that it fetches in Holland 25 or 50 florins per last more than that of the other countries on the Rhine and Main. Feas and beans, likewise, potatoes, melons, and various vegetables are produced in great perfection, and large quantities are exported. But the bones of Nassau is its wine, of which produced about Hochheim is well known by the name of Rem; there are likewise the wines of Markebrunn, Aschaffhausen, and Johannisberg, the last of which is a Prussian Meisterlich, where the emperor Francis conferred on him in 1816 as a rét for his eminent services to the cause of Germany, the emperor retaining the feudal rights, and receiving the tithe on the wine. The prince derives from the estate of this castle in great perfection, and the inhabiting of castle (especially horned cattle) is a chief source of wealth; there are about 200,000 horned cattle, 70,000 swine, 180,000 sheep, 10,000 horses, and 10,000 goats. The minerals are silver, lead, iron, copper, marble, freestone, limestone, and porcelain clay. There are also some salt-springs. The forests, which abound in game, supply vast quantities of timber and firewood. The smelting and manufacturing of metals are of no importance; the principal export is malt, which is sent to the breweries of Nuremberg, Weissenburg, and other places, and to the exporting of the produce of the country. With respect to religion, the inhabitants, who at the beginning of the 18th century amounted to 379,275, are partly equalled between the Roman Catholic and the Protestant churches.

In the year 1817 the Luthers and Calvinists agreed to unite in one body under the denomination of Evangelical Christians. The Duchy of Nassau, the grand-duchy of Hesse, the principality of Nassau, a military school, a seminary for teachers, a deaf and dumb institution, an agricultural school, and 65 district schools. There is no university, but the young men study at Göttingen, where there is a professor who lectures on the laws of the country.

The duke was formerly an absolute sovereign, but in 1817 a representative constitution was introduced, with two chambers, which have larger powers than those of some other German states. The military force amounts to 4000 effective men. The revenue of the country is derived in part from the amount of twelve millions of florins. The duchy has been composed of so many different territories, and the exchanges and partitions, have been so numerous, that a regular history of the country is out of the question. Otho, the present reigning sovereign, is the only living descendant of the line of Nassau, as the founder of the Nassau family, which after the death of Henry II. was divided into two branches, of which his sons, Wabram and Otho, were the heads. The dukes of Nassau are descended from the elder, and the house of Orange the ancient of the younger branch, subject of the emperor Charles V. Besides William I., the most remarkable per-
II. MAURICE OF NAASSAU, the second surviving son of William I., was born in 1567, and named after his maternal grandfather, the celebrated Elector Maurice of Saxony, whose political genius he inherited. Although at the tender age of two he was transferred to the Protestant faith, accompanied by the elevation of his mother to the throne, William II., believing him to be as deep in the insidious designs of Philip II. as he had been in that of Charles V., unequivocally spoke to him of the secret treaty which the courts of France and Spain had recently concluded for the extermination of that nobleman and his kingdom. This disclosure had a double consequence: for William hesitated to communicate it to the leaders of the Protestant party in Brussels, and Philip II. discovered that he had given the information. The existence of this treaty and its details were the subject of the most solemn discussions of that moment. The disclosures which followed—this to the public and the Protestants, the semi-confession of King Henry II., the voluntary abjuration of Charles V., and the secret negotiations which followed—were of such importance that the whole of Western Europe was shaken. The result, however, was the acknowledgment of the sovereignty of the Netherlands, and as stadtholder of Holland, Zealand, and Utrecht, Maurice, covertly but indefatigably employed himself in undermining the tyrannical designs of Philip. The tortuous and often treacherous policy pursued by William during all this period was the foundation of that military power which was to be the mainspring of the great political changes that were about to take place. The means by which he acquired and sustained it were the most ingenious that can be conceived, but the means by which he employed it were the most wretched that can be imagined. The result was the establishment of the Malet House, and the end of the old line of Burgundian adventurers; but the means were such as to render the whole transaction the most disgraceful in the history of the world.
in his later career, another worthy opponent, in the equally famous Italian, Spinola, who had succeeded to the command of the Spanish forces. Under such leaders, the operations of the hostile armies in the Netherlands riveted the attention of the world; and the camp of Maurice, as well as that of Parma and Spinola, being thronged with volunteers of distinction from every quarter of Europe, became the great scene of military instruction.

The cessation of hostilities exhibited the qualities of Maurice in a less favourable light. He had laboured from selfish views to obstruct the conclusion of the truce with Spain, and was successfully opposed in these and other ambitious designs by the prudent policy of the prince of Orange. Barneveldt, a man of real patriotism, eminent ability, and incorruptible integrity. But the religious disputes, which arose in the republic at this juncture between the Calvinists and Arminians, enabled Maurice to revenge himself upon the Romanists. So far from his views being, as his opponents, opinions, Maurice placed himself at the head of the opposite faction, the Calvinists, or Gomarists, as they were called after Gomar, the professor of theology at Leyden, who had been the antagonist of Arminius. As the Gomarists were the most ardent, Maurice was allowed to length prevail; the Arminian preachers were banished; and, in 1619, at the age of seventy-two years, the virtuous and venerable Barneveldt, who had for nearly half a century served his country as successfully in the cabinet as Maurice had done in the field, was, by the eternal disgrace of that prince, brought to the scaffold after being convicted on various false charges, of which the principal was, that he had 'troubled the state and religion.' [118.]

The statholder, who by the decease of his elder brother had succeeded, in 1618, to the principality of Orange, gained little by his persecution of Barneveldt. After the death of the pensionary, the people awoke to a sense of their injustice and ingratitude to that patriot; and his oppressor Maurice suddenly became as hateful and suspected in their eyes, as he had hitherto been popular. His designs of acquiring the sovereignty of the states were perceived and frustrated; and whenever he appeared in public, groans and execrations were raised as the mark of his opprobrium.

The resumption of hostilities with Spain, at the expiration of the truce in 1621, turned the tide of public indignation; and Maurice again appeared in arms to measure himself against his old antagonist Spinola. The fortune of the contest however between these two great commanders was by no means balanced, that it would be difficult to assign the palm of victory to either. In 1622 Maurice compelled the dashing Genevois to raise the siege of Bergen-op-Zoom, after having expended on it the lives of ten thousand of his volunteers; and three years later, he reduced Breda, notwithstanding all the efforts of Maurice, and so much to his mortification, that the circumstance is believed to have produced or hastened his death, which occurred on the 23rd of April, 1625, and in the fifty-eighth year of his age. He must be referred to as the herald of martial discipline, and as the model of martial discipline, which was deeply studied in the enduring lessons of classical antiquity, and as carefully applied to the exigencies of his own times. He was the first to methodise the practice of sieges, encampments, and marches; and he introduced numerically reinforced in the armament, training, and formation of troops. He taught a cavalry of inferior physical weight to engage in close encounter, and to overthrow the ponderous masses of the old central armie; he first accustomed the infantry to a systematic management of their arms; and to his instinct and skill he ascribed the success of his operations from the slow and cumbrous manner of movement which have been the simplest elements of martial discipline.

To this may be added, that the elecrity, as well as good order of his marches, the able arrangements by which he husbanded the lives and health of his troops, and the skillful selection of his officers were chosen and secured from assault, are the constant subjects of contemporary eulogy. He excelled particularly in the art of fortifying, besieging, and defending places; and, as the circumstances and localities of the contest in which the statholder was engaged rendered it impossible for the States to hazard the disadvantage of decisive encounters in the field, his successes were gained more by a war of sieges, marches, and entrenched camps, than of great battles. But the victories of Turnhout and Nieuport were not the less the schools of his art. The first was the first important defeat inflicted upon the Spanish band, which had so long been the terror of Europe; and it was in the school of Nassau that the fundamental rules of military science were established, which, within less than half a century, were given form to by the great military code of the Imperial and Spanish service, in the plans of Leuthen and Rocroi.

III.—William III. of Nassau, Prince of Orange, statholder of the United Provinces, and ultimately master of all Europe, was born in the year 1650, and was the posthumous son of William II. of Orange, by Mary, daughter of Charles I. king of England. As William II. the eldest son of William the Silent, was the eldest son of William the Silent, by Louisa, daughter of the famous admiral Coligni, William III. was great-grandson of the founder of the Dutch republic, and was also lineally descended, in the female line, from the royal line of the House of Orange. The care of the orphan had been by the death and infancy of William III., but his youth was destined to suffer for the errors of his parent. The statholder Frederic Henry, unlike his brother Maurice, had administered his office with so moderate a hand as to violate the liberties of the republic, or give umbrage to the jealousy of the States; but his son William II., even in the brief career which was cut short by death in his twenty-fourth year, contrived, by his violence and infringement of constitutional rights, to revive public suspicion of the dignity of the House of Orange and his descendants prospectively from the statholdership, was only satisfied by a secret engagement to the same effect, to which Holland, as the leading province of the Union, disgracefully acceded. The reign of William III. was an era of disturbances, to the British throne, in a few years, tended however at once to raise the hopes of the adherents of the house of Orange, and to increase the disquietude of their opponents; and, in 1667, the republicans or aristocratic party, headed by the two celebrated brothers, John and Cornelis de Witt, succeeded in inducing the States to pass the 'Perpetual Edict,' for ever abolishing the office of statholder. But the iniquitous aggression of the French king, Louis XIV., upon the republic in 1672, soon removed the interference of foreign power, which might have been the intentions of the De Wits, whose views had left the republic defenceless. Confiding in the friendship of France, and distrusting the best officers of the army, as devoted to the House of Orange, they had, by removing all the domestic officers of the public revenue of the republic, that resistance to the invaders seemed least. The Orange party were loud in their clamours against the administration of their rivals; and the populace, who had always been favourable to the family of Nassau, were invited to revolt. Their fury was at last inflamed by the murder of the De Wits, whom they murdered with horror barbarity; and a young prince of Orange was tumultuously raised to the proscribed dignity of statholder.

William III. was only in the twenty-second year of his reign when he was thus suddenly called to the government of a factious and disorganized state, a lawless populace, and a disparited and disorganized army. With such means was
be required to arrest the progress of the victorious king of France at the head of a veteran army of 100,000 men, aided by the best generals of the age, and supported by the power of the English Crown. In England, which the baseness of Charles II. had rendered subservient to his ambition. But, happily for his country and the world, William at once displayed the same characteristics of a firmness and sagacity far beyond his youthful years, which seem to have been the heir-looms of his race, and equally to have distinguished him with his great ancestors William the Silent and Maurice. He indignantly repelled all the efforts of the combined kings of England and France to seduce him from the cause of the republic; and though France rendered him a generous, if he did not see that the destruction of the commonwealth was inevitable, he replies, 'There is one means by which I at least shall be sure not to witness the ruin of my country: I will die in the last ditch. His magnanimity was equal to the exigencies of the French army, of which he formed and conducted the counsels; and it appears among the miracles of history, that, in two short campaigns, the French armies, which had overrun the United Provinces, and penetrated almost to the gates of Amsterdam, were entirely driven out of the territory on which the principal part of the French victories had been dared every measure to bring the veteran Condé to a battle; and, though he suffered for his temerity at Senneffe, he so nobly conducted himself in that defeat as to extort from his illustrious opponent the generous avowal that 'he had known in his life too much like a young soldier.'

During the remainder of the war, which, after a separate peace between England and the States, was protracted with France for four years, and concluded by the peace of Nijmegen, 1678, the contest was of the most questionable proofs both of his political and military talents; and, shortly before the close of hostilities, he had effected a personal alliance, which largely influenced the fortunes of his subsequent life. This was his marriage with his cousin Mary, the daughter of James, duke of York, and heiress presumptive to the British crown. It is not easy to comprehend the readiness of Charles II. to adopt a measure so contrary to his usual policy and inclinations as this union of the princess with William, who, though his nephew, had been the most relentless enemy of the Charles's succession to the British throne, and was resolute the republic. But lest the growing discontent of his people, and a belief that the marriage would dispose the suspicions excited by his brother's religion, were supposed to have been motives sufficient to obtain his consent, a new arrangement of a family character was made, by which William, on his first visit in England during which the alliance was concluded. To William the union presented obvious advantages: yet he honourably declined any proposals on the subject until he knew he was to enjoy the assurance and ascertainment of the inclinations of the princess; and this disinterestedness was not without its reward in the harmony which distinguished the course of his domestic life with her consort.

Neither the prince of Orange nor Charles II. and his brother probably foresaw all the consequences of this union to the politics of Europe. But no event of William's fortune contributed so essentially to the furtherance of that great design which had become the master passion of his mind—the establishment of the royal house of Louis XIV. and the security of the liberties of the Protestant world. To these great objects, from the first hour in which he had been called to the defence of his country, his whole life was consistent; and whatever degree motives of personal ambition mingled in his plans, he never appears to have suffered any consideration for an instant to interfere with his pursuit of the great cause to which he had devoted himself. Many circumstances contributed to place him at the head of the government when he became head of the government—by his own act, and the decision of the Estates—of the United Provinces in 1661, in resistance to which his first glory had been won. The revolution of the Edict of Nantes, in 1685, by that monarch, and his persecution of his Protestant subjects, had justly alarmed and outraged all their European brethren of the same faith; the insolent pretensions of Louis XIV. had given mortal offence to the emperor and king of Spain; the apprehensions which experience had taught the United Provinces to entertain of the projects of the French king naturally rendered the part of their stand-holder the centre of negotiations against him; and various causes of hatred and fear enabled William to combine the States themselves and the Protestant princes of Germany, with the two Roman Catholic monarchs of the house of Austria and other powers, in the celebrated league which was concluded against Louis XIV. at Augsburg, in 1657. To the completion of that great European confederacy nothing was wanting but the accession of England; and this was obtained, in the only manner which the alliance of her new king, James II., appeared practicable, by his insane attempt to overthrow the national faith.

Ever since his marriage, William had studiously abstained from taking part in the struggle of parties in England; and though, through his activity in thwarting the designs of his brother, he was able to escape the displeasure of his uncle Charles II., he had lived in a decent terms with his father-in-law, and since his accession had professed him aid in suppressing the rebellion of the duke of Monmouth. But when he publicly refused to support the repeal of the Test Act, James began both to treat him as an enemy and to take injurious measures against the United Provinces; and, on the other hand, all the English Protestants turned their eyes to the prince of Orange for the protection of their liberties and faith. On the invitation of the States-General of the United Provinces, William was at length induced to undertake an expedition into England for the restoration of the national rights; and having arranged his preparations with consummate skill, he sailed from Holland with an army of about 14,000 men, composed probably of four or six of the English regiments in the service of the States, and landed at Torbay, on the 5th of November, 1688.

This interference of William in the domestic politics of England has been variously viewed by opposite parties, as the most glorious, or the most questionable, of his actions. It cannot be denied that it was in perfect consonance with the whole tenor of his principles and his policy. The measures of James II. struck at the very existence of the Protestant faith; and their success might have been fatal also to the cause of civil freedom in Europe, to which the crown was equally attached. The birth of a male heir to the crown of England, by James's marriage with a princess of the Roman Catholic communion, may have quickened the zeal of William; and the double injury to his wife's title, and the succession, doubtless had its influence upon his mind. Yet there is no reason to discredit his sincere anxiety for the Protestant cause, which without these interested motives might assuredly have prompted his enterprise. The decision of private life was usually permitted to have sway in the breasts of princes, it would not be easy to justify William in hazarding his throne or accepting the crown of his father. But he had himself personally little reason to love James, who had reluctantly received him as a non-in, and never conferred him friendship or gratitude; nor had there at any time been circumstances of private regard between them to outweigh considerations of public duty or personal interest.

The landing of William in Torbay was followed, after a few days of hesitation, by an almost total defection of James's English subjects from their allegiance; and with unparalleled ease the-young prince ascended the throne of his forefathers. The bloodless revolution effected which changed the royal line and firmly established the constitution of these realms. For once all parties and orders of men in the nation, except a very small minority of Roman Catholics, peaceably concurred in the necessity of the change. The crown when the betrayed and misguided king fled to France, the most opposite principles of passive obedience and popular rights were strained to the same practical conclusion, that James II. had either deserted or forfeited the throne. The most important question the whole of England the seat should be occupied, terminated the short-lived concord of factions. But William, whether moved in part by a mere selfish ambition, or wholly by a better conviction of the public exigencies of the crisis, at once took up all the schemes of the high monarchical party for restricting his functions to

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a regency, either on behalf of his wife or her infant brother. He declared himself, except as king, he would not remain in that quality. This decisive language hastened the proceedings of the convention parliament, which William had composed of the peers, the surviving members of the three last houses of commons, and the corporation of London; and in the state of the moment, the prince of Orange, with constitutional limitations to its power, was conferred jointly upon the prince and princess of Orange, with remainder successively to the issue of the latter, to the princess Anne and her children, and to the heirs of William by any issue.

Notwithstanding the ease with which William III. thus acquired the British crown, he was soon compelled to contend in arms for its preservation. In Scotland the cause of James was upheld by the gallant viscount Dundee, but parried with his fall in the brief moment of victory. In Ireland, the struggle maintained by James’s Roman Catholic adherents was more obstinate; but William in person inflicted on them a memorable defeat at the passage of the Boyne in 1690; and the capitulation of Limerick in the fall of that year. Thus had William the satisfaction, the greatest probably which his new dignity gave him, of engaging England in the League of Augsburg. The war of that confederacy against Louis XIV., of which the principal conduct was intrusted to the Duke of Ormonde and indeed William himself, was possessed of considerable military talents, he wanted that good fortune which the antients numbered among the most indispensable attributes of a great general; and he sustained in the course of this struggle two severe defeats from the arms of the French prince of Orange, who was in the position of a nominee for the English throne.

To the peace of Ryswick, which terminated the war in 1697, little more was gained from the French monarch by the allies than the recognition of William III. as king of England in 1694, and possession of that throne had meanwhile given him little happiness. Though almost all the nation had at first concurred in the Revolution of 1688, the tory and high church party were in general indisposed to the pretensions and proposals of William. The nobility, who possessed the consideration of military ranks, with the residing in the palaces of the royal power; and the cold reserved temper and ungracious manner of William disgusted and alienated the minds of his subjects in general. His most favourite schemes were continually thwarted in parliament; his whole reign was harassed with intrigues of faction and plans of insurrection at home; and his life and throne were assailed from abroad with base plots of assassination by the adherents of James II., and with projects of invasion undertaken by Louis XIV. for the restoration of the deposed king. To add to the distresses of William, he experienced in 1695 a severe domestic calamity in the loss of his queen-consort Mary, to whom he was deeply attached. Her decease, as she left no issue, terminated all claim of her husband to the crown in the eyes of that part of the nation which was attached to his person; and the loss involved in the possession of hereditary right in his representation of the throne. His measures now experienced systematic opposition from all parties: from the Jacobites, as the partisans of the exiled monarch were termed, who of course regarded him as a usurper; from the Tories in general, to whom he was personally obnoxious; and from the Whigs and republicans, who desired in various degrees to lower or annul the royal power. The first use therefore which was made in parliament of the peace of Ryswick was to compel him to reduce the civil lists, imposed upon the English revenues, and to send out of the kingdom the regiments of French Protestant refugees, as well as his own Dutch guards; and these and other mortifications had such an effect upon his mind as to extort from him a passionate expression of his regret that he had interfered in the affairs of a nation at once so ungrateful and so suspicious.

From the annoyances of his position in England, he sought relief by renewing with more ardour than ever his attention to the affairs of Europe, and by pursuing his favourite project for humbling the power of the French king, which the precocious health of Charles II., the childless monarch of Spain, and the pretensions of the house of Bourbon to the inheritance of his dominions, threatened to reduce him to a figure less than even William, by edifying evils to the balance of power in Europe, William successively negotiated two treaties of partition for the Spanish monarchy, to both of which Louis XIV. was an artful and faithless subscriber; for when the Spanish king, in indignation that other powers should dismember and distribute his dominions, bequeathed them at his death, in 1700, to Philip duke of Anjou, second son of the dauphin, Louis XIV., in spite of every obligation of treaties, accepted the testament for his grandson.

With declining health, he was sensibly affected by this defeat of all his labours; but he applied himself with his usual energy to form a new league against France; and the insulting conduct of Louis XIV. at this crisis, in giving the son of James II., on the death of that monarch, the title and authority of king of England and of the British nation, that they eagerly seconded William’s wishes for a war. But, in the midst of eager preparations for the commencement of hostilities, William’s health was suddenly brought to a close. His constitution, originally frail and sickly, had now been weakened to an intolerable degree by incessant and harassing anxieties. An accidental fall from his horse, by which he broke his collar-bone, gave a fatal shock to his worn-out frame; and he expired at Kensington palace, on the 8th of March, 1702, in the fifty-second year of his age.

With the death of William III. the male line of William the Silent became extinct; and the state-general were not sorry to leave the stadtholdership vacant, and tacitly abolished. But William had named for his person his eldest daughter Mary; who, by the marriage of her son Nassau-Dietz (grandson of his aunt Albertina Agnes by William Frederic of Nassau-Dietz), from whom the present regal line of Orange is descended. The following has been the succession of kings by different houses:

William (IV.) Henry Friso, son of John William Friso, born in 1711; married Anne, daughter of George II. of England; was raised by the Orange party to the stadtholdership in 1747, and died in 1751.

William (V.) Batavus, son of William IV., born in 1748, was declared stadtholder (under the guardianship of his mother) in 1751; was expelled by the French in 1755, renounced the dignity of stadtholder by treaty with France in 1802, and died in 1806.

William (VI.) Batavus, son of William V., born in 1772, was restored to the dignities of his family in 1813, was proclaimed king of the Netherlands under the auspices of the Congress of Vienna in 1815, and still survives; having two sons, the eldest of whom, William Frederic Charles, prince of Orange, has also married a princess.

(The principal authorities consulted for the preceding sketch of the most illustrious members of the house of Nassau are—La Géographie des Illustres Comtes de Nassau, Amst., 1624; Commentaries of Sir Francis Vere, Cambr., 1657; Gronovius, Historiae et Notitiae Nederlandiae, Amst., 1658; Le Clerc, Histoires des Provinces Unies Amst., 1723-28; Burnet’s History of his own Times; Hume and Smollett’s History of England, &c.; and L’Art de Fuerger les Dates, Paris, 1816-19.)

In the English, the odour of the present day is given to the tropolomous major, an American annual with pungent fruit; by botanists, to the Watercress and plants allied to it; by the Romans it was applied to a plant resembling Mustard, in the province of Galatia.

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not navigable except for a few miles from the mouth. Nearly all of them have a huge sand-bank at their entrance, which prevents all access, and renders them useless as harbors even for small vessels. Most of the rivers have also a rappee at the mouth, in order to check the rise in a high and con-
tinuous ridge of mountains, which runs parallel to the shore of the sea at the distance of about 80 miles. The elevated country mostly serves as pasture-ground, and is always covered with grass, as a want of rain is seldom ex-
erienced there, except towards the southern extremity, where the country frequently suffers from continual drought. During the summer months the grass is generally brown and dry, and towards the end of the dry season it is burnt by the herds, in order that the people may have tender herbage which comes after the first rains. On these elevated grounds there is generally a cool and refresh-
ning breeze, but in the villages which are built in the deep valleys the heat in the dry season is extremely oppressive. The soil is rich, especially on the flats near the margin of the
rivers, and along the hill-sides, where the natives cultivate pumpkins, melons, a species of millet, maize, sweet potatoes, and tobacco. The missionaries have introduced grapes, figs, oranges, lemons, apricots, peaches, nectarines, and some other fruits, which grow in the several sands of vegetable, would so many places grow luxuriously. The domestic animals are horned cattle, goats, and a few horses; some tribes possess also sheep. For further particulars see CAPPARRA. (Stedman's
Swede.)

NATAFRES, Illiger's name for the Swimming-birds.

Swans, Ducks, Geese, &c.

NATCHEZ. [MISSISSIPPI, STATE.]

NATICA. [NERITIDER.]

NATIONAL ASSEMBLY. [MISSISSIPPI.]

NATURAL AMOUNT. — the

NATURAL FACTOR. — the

NATURAL REASON. — the

NATURAL SEED. — the

NATURAL SOURCE. — the

NATURAL TENDENCY. — the

NATURAL WEALTH. — the

NATURAL WOOL. — the

NATURALIZATION. — the

NATURALIZATION OF FOREIGNERS. — the

NATURALIZATION OF MINORS. — the

NATURALIZATION OF SLAVES. — the

NATURALIZATION OF WAYS. — the

NATURALIZATION OF THE HEBREW. — the

NATURALIZATION OF THE INDIVIDUAL. — the

NATURALIZATION OF THE PEOPLE. — the

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majority. It might happen that it would in its results benefit only a small minority of the actual generation, or even nobody at all; and the allegation of this possible insufficiency of the assumption made by the advocate of unsatisfied extinction, that the loss incurred would be confined to the immediate losers, and that there would be a real gain to the great majority of the nation. Such a concession would be an admission that it will be a result of innumerable contracts, on the faithful performance of which depends the happiness of many thousands who are not public creditors. It is hardly necessary to remark that the nation would not afterwards find it easy to borrow money, unless on very reasonable terms for any purpose, however generally useful, or any public necessity, however urgent.

The contracting of the National Debt cannot be said to have been begun before the Revolution of 1688. The kings of France had, at all times, and the allegation of this possible way of alleviation at this time, and at the break of the Seven Years' War, in 1756, the debt was very considerable. A public writer of repute, Mr. S. Hannay, says, at that date, *It has been a generally received notion among political arithmeticians, that we may increase our debt to 1,000,000,000, but they acknowledge that it must then cease by the debtor becoming*.

When the Seven Years' War was ended by the peace of Paris, the debt reached 139 millions and the annual charge was 4,600,000. During the twelve following years, a period of profound peace, only 10,400,000 of the debt was paid off. The annual rate raised the debt from 129 to 256 millions, and the annual charge amounted to 135,597,862. So little was done in the way of liquidation during the following ten years, that in 1801 the debt was 260 millions, and its annual charge to 4,553,832. The outlay occasioned by the prosecution of this war was far beyond all precedent. Between 1713 and the peace of Amiens the addition made to the capital of the debt, which was then 72 millions, was 3,780 millions. The annual charge upon the public exceeded 32 millions of money. This enormous, this frightful rate of progression, appears to have excited far less alarm than was expressed at the comparatively trifling additions made at the beginning of the sinking fund. The sinking fund, which must be in great part attributed to the establishment of the sinking fund, and to the hope which it held out of cancelling at no very distant period each amount of debt successively increased.

A plan for the gradual extinction of the national debt by the establishment of a sinking fund was proposed and partially applied in 1716 by Sir R. Walpole. The scheme for that purpose proposed under the same name by Mr. Pitt in 1750 had a greater show of reality about it. By this scheme the sum of one million was annually set apart from the income of the country towards the extinction of its debt. Other sums were rendered accessory to the plan, and it was supposed that at the expiration of 28 years the annual income of the sinking fund would amount to four millions, a part of which was necessary to the payment of the interest when the debt was reduced, to a great extent, to an endowment money fund. So far the project bore the stamp of reasonableness and prudence: had the fund of one million annually assigned to commissioners been an actual surplus of income over expenditure, its operation must speedily have drawn from dividends on stock purchased by the commissioners. It was in this, that the sums devoted to it were borrowed for the purpose. The only real advantage secured by tax meant arose from the unfounded confidence which it imparted to the public, and a great fraction of the debt was afterwards redeemed. The difference between the average rate at which money was borrowed and at which purchases were made by the Commissioners who managed the sinking fund between 1793 and 1814 was such, that through the operations of the fund, upon which such confidence had been reposed, the country owed upwards of 11 millions more at the end of the war than it would have owed but for those operations. At the period just mentioned the annual income of the sinking fund amounted to 13,400,000, arising from the following sources: most of it with funds borrowed at a higher rate of interest for the purpose. It was impossible however during a time of peace to
raise by means of taxes so large an amount, in addition to the actual current expenditure of the country and the interest upon the unredeemed portion of the Debt. During the war, when the deficiency of income was covered by yearly loans, the fallacy was not quite so apparent as it now soon became, for a few years after the peace the deficiency in the public income was borrowed from the sinking fund commissioners, a course which secured the subidity only the more apparent, and in 1824 the plan of keeping up a large nominal sinking fund in the absence of actual surplus income was abandoned. The amount of the National Debt unredeemed on the 5th of January, 1816, was stated to be as follows in the fourth Report of the select committee of the House of Commons on public income and expenditure:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>3%</td>
<td>£560,916,019</td>
</tr>
<tr>
<td>4%</td>
<td>10,740,013</td>
</tr>
<tr>
<td>5%</td>
<td>148,936,403</td>
</tr>
</tbody>
</table>

Perpetual annuities £816,311,939

Total of unredeemed debt £865,186,324

The annual charge upon which was:

- Interest upon perpetual annuities £28,278,919
- Interest upon unfunded debt £1,894,612
- Charge for management paid Bank of England £284,673

Total annual charge £324,457,141

The experience of the last twenty-five years has proved that the only important relief from the pressure of debt to be obtained, even during a profound and long-continued peace, will probably be derived from the leastening of the rate of interest. The price of 5 per cent. stock at the beginning of 1822 was advanced to 6 or 6½ per cent. above par, and advantage was taken of this circumstance to induce the holders to exchange each 100l. of 5 per cent. annuities for 1822, of 4 per cent. annuities. On this occasion 140,250,828l. of 5 per cent. stock was cancelled, and 147,636,326l. of 4 per cent. stock was created, the annual charge being by this means reduced by the sum of 1,122,000l.

In 1824 a further saving of 281,034l. per annum was effected by increasing the interest payable on 76,036,882l. of 4 per cent. stock; and in 1830 a further statement of one-half per cent. was effected on the 4 per cent. stock created in 1822, whereby the sum of 700,000l. per annum was saved for the public.

Some little progress has been made since 1816 in the reduction of debt by the employment for that purpose of actual surplus revenue. An addition has on the other hand been made to the public burthens by means of the grant of 20,000,000l. voted by parliament for compensation to the owners of slaves in the British colonies who were emancipated by the act of 1833. The unredeemed funded and unfunded debt which existed on the 5th January, 1839, and the annual charge thereon, was as follows:

<table>
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<tr>
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<tbody>
<tr>
<td>3%</td>
<td>£508,360,605</td>
</tr>
<tr>
<td>4%</td>
<td>2,992,566</td>
</tr>
<tr>
<td>5%</td>
<td>1,615,385</td>
</tr>
</tbody>
</table>

Perpetual annuities £761,347,690

Total of unredeemed debt £3,509,710, at which rate the total extinction of the debt would not be effected until the year 2053. The slow progress made in this direction stands in striking contrast to the rapidity with which the load was accumulated, the entire diminution effected during twenty-three years of peace being scarcely equal to the additions made during some of the individual years of the war. This will be seen by comparing the above statements for 1815 and 1839, that the terminable annuities have increased from 1,894,612l to 4,292,173l.

By the act 48 Geo. III. and several subsequent acts, the commissioners for the reduction of the National Debt were empowered to grant annuities, either for lives or for periods of twenty years, on such terms as should ensure for such annuities being made in equivalent portions of permanent annuities, which were therefore to be given up and cancelled. By this course, which it will be seen has been acted upon to some extent since the peace, some future relief will be obtained at the expense of a present sacrifice. This plan, provided it be not carried so far as to interfere with the onward progress of the country, through an overload of taxation, appears to be dictated by sound prudence. A part of the terminable annuities (nearly one-third of the present amount) will expire in 1860, and after that time portions will rapidly fall in; so that without looking to any redemption of debt from surplus income, or to any further reductions in the rate of interest, the next twenty-three years will be productive of nearly as much relief as has been obtained since 1816.

If this course of proceeding is justly characterised as prudent, what must be said of the scheme of a directly opposite tendency which was brought forward and partially carried into effect by the government in 1833? A proposal was made for commuting the half-pay and pensions usually denominated the 'dead weight' was adopted in that year, the annual charge to which those obligations amounted was about five millions. From year to year the public would have been relieved from a part of this charge by the falling in of lives, until, according to the most accurate computation, the whole would have ceased in forty-five years. The measure above alluded to was an attempt to commute these diminishing payments into an unvarying fund of forty-five millions, payable in certain years which was made assumed that by the sale of such a fixed annuity of 2,800,000l., funds might be procured enough to meet the diminishing demands of the claimants. Only a part of this annuity was sold. The remainder purchased an annuity, payable half-yearly until 1867, for 585,740l, and paid for the same between 1823 and 1825, in nearly equal quarterly instalments, the sum of 13,089,419l.

For the sake of obtaining a partial relief during those six years, to the amount of 94,000,000l., which was given upon the country during thirty-nine subsequent years an annual payment of 585,740l. It is not possible to allow that both these courses, so directly opposed to each other, could have been wise. Without inquiring further into the matter, it may be said that the public has been subjected to one of the most gratuitous and unjust sacrifices ever made in any country. As a thing which has been done in the course of the present century, there is perhaps nothing of the kind that can be pointed out with equal reason.

It will be seen that some saving has been effected between 1816 and 1839 in the charges of management. This saving was part of the bargain made with the Bank of England on the renewal of its charter in 1833, and may be considered as a part of the price paid by that establishment for the prolongation of certain of its privileges then on the point of expiring. The system employed for the management of the public debt by that corporation is explained elsewhere in this work. [Bank, Banker, Banking.] The functions intrusted to the Bank of England with reference to the National Debt do not extend to the transaction of any matter connected with its reduction. Such business is placed under the control, a body of commissioners, who act ex officio under the provisions of an act of parliament. This board is composed of the speaker of the House of Commons, the chancellor of the exchequer, the master of the rolls, the lord-chancellor of the Court of Exchequer, the accountant general of the revenue, the speaker of the House of Lords, and the governor and deputy-governor of the Bank of England. The greater part of these commissioners do not take any part in the management of the
business, the details of which are attended to by permanent officers, viz. a secretary and comptroller-general, and an actuary, with an adequate establishment of assistants and clerks: the ultimate control is exercised by the chancellor of the exchequer for the time being, assisted by the governor and deputy-governor of the Bank of England.

NATIONAL GALLERY. Of the origin of this public collection of paintings mention has already been made at the end of the article on the British Museum. Previously to this, the Angerstein collection, which was purchased by the Trustees of the British Museum, was lent to the Gallery in 1834 by Lord Northumberland, a gentleman of great taste, who had formed it with a view to endowing the nation with a collection of the most important artists. A few of the pictures, therefore, have been temporarily removed from Lord Northumberland’s collection, and will be shown hereafter. The Gallery contains now about 2,000 pictures, including those of the Angerstein collection, and is considered to be the most important of its kind in the world.

The collection includes works of art by many of the most famous painters of all periods and countries. Among the masterpieces are works by Titian, El Greco, Rembrandt, Vermeer, and many others. The Gallery is open to the public, and admission is free. It is a popular attraction for tourists and art lovers alike.

The Gallery is also home to the National Portrait Gallery, which contains portraits of many famous figures in British history. The collection includes works by Reynolds, Gainsborough, and many other famous portrait painters. The Gallery is a treasure trove of art and history, and is a must-visit for anyone interested in art or British history.
The specimens of the English school are far from numerous, and some of them by no means chief-d'œuvre of the artists to whom they belong; but it is to be hoped that the Gallery of modern English art, which so far as the nucleus is concerned, is exhibiting proofs of native and national talent. It will be well therefore if, by the occasional purchase of the finest productions of living talent, our artists were invited to apply themselves to works of higher aim and more sterling character than that of adorning a niche that will be observed not in the Gallery, but in the State Room, and to look forward to a place in the Gallery as to a monumental niche in the temple of Fame. It will however soon become necessary to consider how space is to be provided for fresh acquisitions, since, although the collection of pictures, as to the public use of which the public have, on the whole, agreed, will eventually and ought to increase, the increase has been such that the portion of the building allotted to the Gallery is already filled with as many pictures as it can properly contain, since it consists of no more than five rooms altogether, and these of two different sizes. This brings us to speak of the edifice itself, which has been more severely and more illiberally censured, both for its external appearance and interior accommodation, than almost any other architectural work. In either respect it is vastly deficient, whether, taking the nucleus only, with the same conditions, any one else would have been able to do much better, at least as far as accommodation is concerned. Not only was the plan restricted to an inconveniently narrow slip of ground, but the alleged, yet by no means apparent, necessity of keeping the street through two passages throughout the lower part of the building, has caused the ground-floor to be so divided that should occasion for so doing arise, it will be found impossible to form a spacious gallery of any kind, either for sculpture or pictures, or to avoid the necessity for providing two distinct entrances and staircases, without the means of projecting out the latter at the rear of the building, has unavoidably caused all the centre portion, accounting to about one-third of the interior, to be divided into several stories, instead of one, which would have been sufficiently and more effectively distinguished, by its greater loftiness, without it. The entire extent of front is 460 feet, but this length is too much broken up into separate parts, and more so than would else probably have been the case, if the architect had set back the extremities in order that the east end of his
NAT

K A T

104

lowed alive, and with the lower limbs and parts foremott,
the head still continuing in its proper position, and disappearing last During the operation of deglutition the cne*
of the frog are very distressing, and we have delivered txuro
obtained internally, and the end facing the church, which than one from its enemy unfairly perhaps, in conseqoeuc*
Tbe fv%
insignificant-looking bit, would of being attracted by tne cnes of the sufferer.
is now a very narrow and
have been considerably augmented. It is to be regretted, evidently remains alive for some time after it Isas beru
entrances to swallowed, in the course of which the jaws are dilated, and.
too, that the small windows at the sides of the
the two thoroughfares were not got rid off, by being turned so to speak, dislocated in order to allow of the passage of ibe
Mr.
towards those passages; and perhaps a little more study disnroportioned body to be conveyed into the stomach.
•
and contrivance would have enabled the architect to dis- Bell, who gives in his British Reptiles* arery accurate and
pense with those in that division of the facade from which clear account of the manner in which this operation U perthe portico projects, and where they sadly cut up that mass. formed and the dilatation effected, states that lie has bear J
At all events, there would have been no difficulty whatever a frog distinctly utter its peculiar cry several minutes after
story,
it had been swallowed by the snako.
The same zoolof»t
in entirely concealing the windows in the basement
by merely continuing the podium as a low screen before observes that the frog is generally taken by one of tbe
them, with breaks forming pedestals for statues at intervals. hinder extremities, because the latter is most frequently io
By that means a deformity would have been got rid off, the act of fleeing from its pursuer when taken; and in that

view of the portico
had lie been
of St. Martins from Pall-Mall East; whereas
allowed to bring those parts as forward as the background
of his portico, very much more space would have been

buildinsr should not at alt intercept the

the ordinary dwelling-house look attending those kitchenwindows have been avoided, and an air of nobleness and richness, with some degree of novelty of design also, have been imparted to the whole facade. It is true, the rooms in the offices
below would not have commanded the view they now do,
yet that is a very minor consideration, and ought not to have
been allowed to stand in the way of its being done. Fortunately however for such improvement it is even now not
too late, since it may be carried into effect at any time
without the slightest trouble or inconvenience. So also may
the now empty niches be filled with statues; but there is
no hope that anything will ever be done to remedy one preva-

and very serious defect, namely, the excessivo poverty
of the whole entablature, which renders it not only at variance
with the richness of the columns, but insignificant in the
general effect, whereas even some little exaggeration with
respect to the depth of its members would have been allowable, if merely because a little more height might thus have
been given. Notwithstanding these and other defects, some
of which appear to have been forced upon the architect, there
lent

beauty in particular parts, especially the portico
but for further criticism on the building we must refer to
the work above quoted, where elevations and plains of it will
Plans of it have also been given in the
also be found.
•Companion to the Almanac for 1837/ and the 'Penny
Magazine,' No. 299. The latter publication also contains
(Nos. 8, 12, 24, and 47) notices of some of the principal
pictures. The building was begun in 1833 from the designs
of VV. Wilkins, R.A. (died August 31, 1839), and completed
in 1837; and the first exhibition of the Royal Academy
within its walls took place in 1838.
is

much

LAW

NATIONS,
NATO'LIA.

NATRIX,

OF.

[Law,

p. 361.]

[Anatolia.]

name

genus of Colubrida, a
fiimily of snakes destitute of poison-fangs, and of which the
common snake, Natrix torquata of Ray, may be taken as
Laurenti's

for a

the example.
Generic Character. Head distinct, oblong-ovate, depressed, covered with scuta ; gape wide, body very long,
nearly cylindrical, slender, scales imbricated, placed in longitudinal series, lanceolate, generally carinated, abdominal
shields simple, arched at the margin, caudal shields bise-

—

rial.

(Bell.)

—

swallowed a*
we have above described but he adds, that if the frog he
taken by the middle of the body, the snake invariably turn
movements of the jaws, until the bead t*
it by several

case, the prey, according to his experience, is
;

directed towards the throat of the snake, when it is avallowed head foremost. In taking lizards or birds, tbe snake.
as far as Mr. Bell's observation goes, always swallows ibem
head first. The same author gives a curious but painful
description of an instance where two snakes had seised the
same wretched frog, which, after a long and painful struggle,
and some fighting between the snakes, was swallowed by

the victor.
When the skin of the common snake has been just cast,
it is a very beautiful serpent, and those who have seen it, as
we have, gracefully swimming with elevated head and neck,
and with the sun shining on its ' enamelled skin.* as it
crossed the limpid water of some clear stream or little lake,
will acknowledge its elegance and beauty. Mr. Bell has lbs
following observations upon the subject of this change of
the skin, which, as some misapprehension has existed on tbe
* Snakes,
subject, we proceed to lav before our readers,
like most other re pt ilia, shed their cuticle or outer skin st
greater or less intervals.
It is a mistake to assign a particular period to this process ; some have stated it to occur
once, some twice in the summer; but I have found it to
depend upon the temperature of the atmosphere, and on the
state of health, and tne more or less frequent feeding of tbe
animal.
I have known the skin shed four or ire times
during the year. It is always thrown off by reversing it ; so
that the transparent covering of the eyes and that of ths
scales also, are always found in the exuviae.
Previously to
this curious circumstance taking place, the whole cuticle
becomes somewhat opaque, the eyes are dim, and the animal
It also becomes more or less iDactrre,
is evidently blind.
until at length, when the skin is ready to be removed, beta*
everywhere detached, and the new skin perfectly hard smdernealh, the animal bursts it at the neck, and creeping
through some dense herbage, or low brushwood, leaves it
attached, and comes forth in far brighter and clearer
colours than before.*
White and others have remarked an offensive power ta
this creature, that of ' stinking se defendendo,' as White
He adds, ' I knew a gentleman who kept
describes it.
tame snake, which was in its person as sweet as any animal
while in good humour and unalarraed ; but as soon m% a
stranger or a dog or cat came in, it fell to hissing, ami fitted
the room with such nauseous effluvia as rendered it hardly
supportable.'
But this offensive odour, which is expelled
from certain glands, is not emitted in self-defence alone. It
is also said to be the concomitant of sexual excitement.
Reproduction. Oviparous, as in tbe rest of tbe genus. The
eggs, to the number of sixteen or twenty, are deposited tn a
connected chain in some dung-heap or warm situation, tbe
connection being effected by a glutinous substance, and
there left till the heat of the place or of the sun calls the
young into life. In the museum of the Royal CoUeee of
Surgeons {Physiological Series, No. 2708) is'a preparation
of a species of coluber, in which the ova in theovaha are is
an advanced state of development ; the ovisac nearest Use
expanded anterior orifice of the left oviduct is near the
period of discharging its contained ovum, and the lonsrittadinal line is discernible, which indicates the place of the
future rent by which it would have escaped.
Tbe done* t»
laid open ; a bristle is placed in the termination of the
rectum, behind which may be observed tbe semilunar Am ins

—

Head and Ull

of Natrix.

The Common

Hm<t seta from above ;

UU from below.

too well known to require description the female is larger than the male. Its
food consists of lixmls, young birds, bints* eggs, mice, and
more particularly fio^. The latter are generally captured
or

Pinged Snake

is

:

by ono of the hind

legs,

and

in that case the prey is swal-

Digitized by

V^OOQlC


in which the oviducts terminate, and the bilobed promon-
dition from which the retractile common. Illustra-
tion of the Ametabolous sub-class, in which copulation is
attended with intromission) exhibits the posterior part of
the body of the Common Snake with the ventral integu-
ments dissected off from the abdomen and tail, to show the
tissues beneath the integuments. The testes are small, slightly
compressed, oblong bodies, situated anterior to the kidneys,
the right about an inch in advance of the left, corresponding
with the difference in the relative position of the kidneys;
the penis, which consist almost wholly of a prepuce or inver-
ted sheath, and a small glans, are retracted within their
sub-asal cells; bristles are inserted into the outlets of
these receptacles, and pass into the cavities of the inverted
prepuce. The muscles which retract the penes and invert
the sheaths are exposed as they pass backwards to their
origins from the inferior spines of the caudal vertebrae. No.
831 exhibits the termination of the abdomen and tail of a
large Coluber, also prepared to show the male sexual organs.
(Catalogue, vol. iv.)

Habit, &c. The common snake commences its hybern-
ation either late in summer, under the root of a tree, or
other sheltered situation, about the end of autumn; and
then they coil themselves up, sometimes in numbers, till
the spring again brings them forth. Many instances of
these have been recorded, and many more may be found
in some of our immediate observation. Mr. Bell gives the
following account, showing that these snakes may be made
to distinguish those who caress and feed them. 'I had one
many years since, which knew me from all other persons;
and when let out of his box would immediately come to me,
crawl under the sleeve of my coat, where he was fond of
lying perfectly still, and enjoying the warmth. He was
acquainted to come to my hand for a draught of milk every
morning at breakfast, which he always did of his own accord,
he would fly from strangers and hissed if they meddled
with him.'

The following are the synonyms collected by the last-
mentioned author: — Natrix torquata, Roy, Fleming.
Trachylagurus lacertépe; Natrix lacertépe; Natrix
Laurenti, Tropidonurus Natrix, Kuhl, Gray. Ringed
Snake, Pennant. Couleuvre à Collier, Lacépédé. It is the
Ringelmann of the Germans, and Tomt-Orm, Sno, and
Rig-Org of the Finnish Suomee.

The editor of the last edition of Pennant's 'British Zoology,'
the Rev. L. Jenyns, and Mr. Bell, are all of opinion
that the Dumfriesshire Snake of Sowerby's 'British Miscel-
nary' is probably an immature variety of this species. The
egg of Pennant seems however to be in doubt whether it is
the young of the Aberdeen Snake, Anguis Erzy, or of the
Natrix here treated of. But there can, we apprehend, be
hardly any doubt that the Dumfriesshire Snake is the young
of Natrix torquata. The Aberdeen Snake is nothing more
than the Crotamor, or Ringed Snake.

Geographical Distribution.—Europe, 'from Scotland
and the corresponding latitude of the Continent, to Italy
and Svaly.' (Bell.)

With reference to the alleged inability of reptiles to live
in Ireland, Mr. Bell says, 'I have already mentioned the
existence of Lacerta cugrus there, and with respect to the
present species, the following is the result of my inquiries.'
'It would appear not only that the common Snake is not
indigenous to Ireland, but that several attempts to introduce
it have been quite failures. We shall therefore not mention
me of some trials of this kind.' Mr. Bell then prints the
following letter from Mr. Thompson, who had recently
received, and which, as Mr. Bell observes, gives a very de-
tailed and clear account of the actual facts.

'I have three letters from Mr. Thompson, who has recently
received, and which, as Mr. Bell observes, gives a very
text, and clear account of the actual facts.

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text, and clear account of the actual facts.
NATTER-JACK; or NATTER-JACK TOAD, the English name for the Bufo calamita of Laurentius. Its colour is light-yellowish inclining to brown and clouded with dull olive; but its most distinguishing mark is the bright-yellow line running along the middle of the back. The warts or glands on the body and the large glands behind the head are reddish; the under parts yellowish spotted with black, and the legs banded with black.

Sir Joseph Banks was the first who drew Pennant's attention to it as a British species: and the latter notices it as frequently dry and sandy places, and as having been found on Putney Common and also near Revesby Abbey in Lincolnshire. The Rev. L. Jenyns records it as occurring in plenty on many of the heaths about London, as well as on Gamlingsay Heath in Cambridgeshire, and in two or three localities in Norfolk. Mr. Bell (British Reptiles) states that he has found them in considerable numbers near ponds and ditches not far from Deptford, where they appeared to have congregated for the purpose of breeding. He observes that Mr. Fleming was not apparently aware of its being an inhabitant of Scotland, but Sir W. Jardine informed Mr. Bell that it is 'taken in a marsh on the coasts of the Solway Frith, almost brackish (certainly so in winter), and within a hundred yards of spring-tide high-water mark. It lies,' continues Sir William, 'between the village of Curse and Saturnus-(Southernness) Point, where I have found them for six or seven miles along the coast. They are very abundant.' The specimens sent to Mr. Bell by Sir W. Jardine were in every respect the same as those found in the neighbourhood of London. We long saw them frequently at Hillingdon near Uxbridge (Middlesex).

Pennant well describes the movements of the Natter-jack. 'It never leaps, neither does it crawl with the slow pace of a toad, but its motion is more like running.' He says that its deep and hollow voice is heard to a great distance. Mr. Jenyns states that it spawns later in the season than the common toad. Mr. Bell gives the following dimensions—

<table>
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<tr>
<th>Inches</th>
<th>Lineae</th>
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<tr>
<td>Total length</td>
<td>2 5</td>
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<tr>
<td>Length of fore leg</td>
<td>1 3</td>
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<tr>
<td>Length of hinder leg</td>
<td>2 2</td>
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</tbody>
</table>

Natter-Jack.

NATURAL, a musical character, thus formed—

The use of which is, to make a sharpened note a semitone lower, and a flattened note a semitone higher; or, in other words, it brings into the scale of the natural key of C any note which had been made sharp or flat. But it must be observed, that the power of this character does not extend beyond the bar in which it appears, except where a lasting change of key is intended, in which case each natural placed at the clef removes a corresponding sharp or flat permanently, or until such sharp or flat shall be restored in like manner.

NATURAL ORDERS OF PLANTS. In classifying the vegetable kingdom according to the affinities of the species, it has been found necessary to collect together into groups such genera as have more resemblance to each other than they have to anything else, and to the name of natural orders has been given. They constitute the foundation of all arrangements, and are wholly independent of the peculiar views which different writers have taken of the manner in which the vegetable kingdom should be otherwise classified; thus, while one author advocates the propriety of arranging Exogenous genera into the mode of the corolla, another by the insertion of their stamens. A third by what is supposed to be the progressive order of their development, and so on, the result of each of which methods is a different sequence of matter, the natural orders themselves which remain unchanged by anything save the variation of their members, constitute by far the most important branch of systematical botany, and accordingly we find that a large proportion of the natural orders yet founded are either wholly without much, or are to be obvious also to any one at all acquainted with such subjects, in that many cases there is in fact no room for discussion; as in the Apocaceae, Asclepiaceae, and Brassicaceae or cress cases, Solanaceae, etc.

It is however sufficiently singular, that notwithstanding the general accordance of opinion that may be said to exist upon this subject in the majority of cases, no one should, if he has been sufficiently attentive to the results of observations upon plants, of his own acquaintance, or of which he has read, be unMOVED to form an opinion on the subject. The many characters by which natural orders ought to be distinguished, and which are unimportant or inapplicable to the limitation of such groups. In the absence of a settlement of the point, all that has yet been effected is, in its very nature, arbitrary and unsatisfactory, notwithstanding that it does not thereby consequently amount to a great extent of the consistency and want of harmony in the different divisions of the natural system, and which is most perplexing to the student. Up to the present time botanists have occupied themselves much more with searching for differences by which groups may be distinguished, than by those which they may be combined, a state of things which has proved advantageous to the science of botanical classification in its infancy, but which, if not corrected, will prevent its ever attaining maturity.

It is probable that such characters as the number of petals, the regularity or irregularity of flowers, the insertion of stamens, direction of ovules, and the presence or absence of particular organs, all which are at present considered of great importance, are so far from serving to separate plants into different orders, that they may be mere indications of a peculiar state of development in plants of the same order. Such orders as Myricacee and Onagraceae serve to place this in a striking point of view. In Myricacee the stamens vary from an indefinite number in Myrtus to only 3 in Myrica; from being polyadephous in Calothamnus to being distinct in Myrtus itself; the flowers are polyptalous in Myrtus, and apetalous in Euclypus; regular in the mass of the order, but irregular in Lycistis and its allies; the ovary is many-celled and many-seeded in Lepisandra and one-celled with two seeds in Calixtryx; altogether intermediate in Eugenia, &c., and superior in the whole of the Leperispermous division. In like manner in Onagracee, Oenothera has 9 stamens, and Hipparis one only; the flowers are polyptalous in the mass of the order, but some Fuchias; regular in the mass of the order, but irregular in Chamerionerium; and the ovary is 2- or 4-celled to the greater number of genera, but 1-celled in Trapa, and in some plants referred to Haloragis. So, in like manner, is erect in Urtica, and pendulous in Dorstenia and Humulus; among Myricacee, it is erect in Verticordia, peltate in Boufortia; and among Onagracee, it is peltate in Ephippium, &c., erect in Cercis. We ought therefore, in sound philosophy, to disallow all the differences just enumerated, as available for the discrimination of natural orders, and yet they are of constant occurrence.
In said Jugeraent be arcings, Naude V. vict him, books being ment and work. Botanists 630. Vente NAULKE'rus. Ce he was out, LuD.M. shows * the the barbarism, in civil years, massacre was ', Gustus Suet., 12,000, Trumpet. In this capa- x., and performed in the Triton, made of silver, to be placed in the middle of the lake Ficusinus, who was made, by machinery, to give the signal for attack with a trumpet. (Suet., Claud., 21.) In Domitian's naumachia the number of ships engaged was (more than 12,000), and in the sea-fight on the lake Ficusinus, there are said to have been no fewer than 15,000 combatants. (Tac., Ann., xii. 56.)

NAUMBURG, on the Saale, a very considerable town of Saxony, in the government of Merseburg, is situated in 51° 0⁰' N. lat. and 11° 40', at a short distance from the junction of the Unstrutt with the Saale. It consists of the town itself, the liberties, and three suburbs. There are several remarkable buildings in this city, especially the church of St. Wendel (which has a very fine library, and many fine paintings, one of which is by L. Cranach, 'Christ blessing the little Children') and the church of St. Maurice, with the monument of bishop Richwins, who also lie interred among the other great men of Saxony, the principal are the court of justice, the town-hall, the gymnasion (or cathedral school), and the city school. Besides the above, there are two churches, two orphan houses, six hospitals, and several schools.

NAUMACHIA, the representation of a sea-fight among the Romans, which was sometimes performed in the Circus Maximus or amphitheatre, water being introduced sufficient to float ships, but more frequently in places made especially for the purpose, which were called Naumachiae. Julius Caesar appears to have been the first who gave a representation of a sea-fight on an extensjve scale, when a lake in the Campus Martius for the purpose, which however was filled up in his life-time (Dion Cass., xl. 23; Suet., Jul., c. 39, with Casaubon's note, and c. 43). Augu.stus also dug a lake near the Tiber for the same purpose, which was afterwards turned into a park by the palace ('nemus'; Suet., Oct., 43; Tac., Ann., xii. 56). Another lake was dug in the Campus Martius by Caligula (Dion Cass., ix. 16); but Claudius exhibited a naumachia on the lake Ficusinus, now Celano. (Suet., Claud., 21; Dion, ix. 33; Tac., Ann., xii. 56.) The old name of 'Hippa-

NAUDE', GABRIEL, born at Paris in the year 1600, displayed at an early age a great aptitude for philological and critical studies. In 1622-3 he studied medicine, but it was not till several years later that he took his doctor's degree in that science at Padua. In 1624 he made his first journey into Italy, and on his return to Paris he published his work, 'Apologie pour les grandes Personnages faussement accusés de Magie,' 1625. In 1631 he accompanied the papal nuncio Cardinal de' Baghni on his return to Rome, and was appointed his librarian. While he was at Rome the controversy concerning the authorship of the book 'De imitatione Christi' began. [KEMPIS, THOMAS.] The Benedectines claimed the authorship for one of their order, John Gersen, abbot of Vercelli; whilst the regular canons of Douai were equally anxious to be easily made. The book being in Italy, was requested to examine several MSS. of the work in question. His report was unfavourable to the claims of the Benedectines, who were much incensed against him, and accused him of bad faith. The affair then came before the courts, and in two parts of the proceedings the suit lasted for years, and was at last compromised. In 1640 Cardinal de' Baghni died, and Naudé, after remaining some time with Cardinal Barberini, the nephew of the reigning pope Urban VIII., was recalled to Paris in 1642, and appointed librarian or criminal clerk of the Benedictines. In this capacity he travelled through several parts of Europe to collect books and MSS. to enrich his patron's library, which was afterwards sold according to a sentence of the parliament of Paris, during the civil war of La Fronde, to the great sorrow of the learned. At the revolution of 1789 the artificial lake, which was Naudé's pride, was destroyed. The account of barbarism, 'Avis a Nosseigneurs du Parlement sur la Vente de la Bibliothèque du Cardinal Mazarin,' 1652. On receiving an invitation from queen Christina of Sweden, to be her librarian, Naudé went to Stockholm in 1652, where he was kept twelve years, and during that time not disembarrassed with his health, he set out to return to Paris, but died on his way, at Abbeville, in July, 1653.

Naudé wrote numerous works in French and Latin, a catalogue of which is annexed to the 'Naudeana, ou Singuliers documents de la vie de Naudé,' 1701 and 1703; the latter edition is by Bay's. His principal works are—1, 'Instruction à la France sur la Verite de 1'Histoire des Freres de la Rose Croix,' 1623, in which he shows the absurdity of the wonderful stories concerning the Jesuit Seances, which had begun to prevail. It was then spreading into France. 2, 'Bibliographie Politique,' being a list of the principal writers upon politics, with his own remarks. 3, 'Avis pour dresser une Bibliothèque,' 1627. 4, 'Additions à l'Histoire de Louis XI.' 1630. 5, 'De Sana, Militia, &c.' 1631. 6, 'Une nouvelle curious about what he had been doing in France. The work was afterwards reprinted in Holland in 1657, and again in 1673, with comments by way of refuta-

Naudé was a man of irreproachable morals, of great learning, but self-contained and somewhat pedantic. Father Jacob, in his 'Gabrielus Naudei Tumulus,' 1659, has collected all the eulogies and epitaphs that have been written in his honour.

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'n wool. There are two annual fairs, one in June, instituted in 1534, by the emperor Maximilian I.; the other, in December, instituted in 1818, by the king of Prussia. The other annual cattle and horse fairs, contribute greatly to the prosperity of the town. An interesting ceremony, called the Kinderfest (i.e. the children's fête), is annually celebrated in commemoration of an attack made on the town on the 28th of July, 1482, by the Hussite under Procopius. On that day, by the advice of a citizen named Wolf, all the children, dressed in shrouds, each carrying a lemon and a green bough, went out of the city to beg mercy for their parents and for the city. Procopius, who had threatened utterly to destroy the town and the inhabitants, because the late bishop had voted at the synod of Kötnitz for the death of John Huss, was so affected that he raised the siege. Though the memory of this event has been handed down for above 300 years, some modern historians have doubted the fact. On the 5th of November, 1532, the great Gustavus Adolfus here took his final leave of his queen before the battle of Lützen. (Müller, Handbuch; also local descriptions by Lepsius, 1822; and Kratsch, 1827.)

NAUPHILIA, (Loc.)

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NAUTILIDAE, or NAUTILACEA, according to Lamarck, the sixth family of his Polythalamous Cephalopoda, contains Discorbites, Polyopariis, Pteropariis, Triamicrus, Spirula, Vorticulus, Namnulites, and Nautilus. To these Mr. G. B. Sowerby, jun., adds Simplex and Endostomites. In the system of M. de Blainville it is the fifth family of his Polythalamaces, and comprises the genera Orthites, Nautilus, Polyopariis, and Lenticules. NAUTILUS, a genus of cephalopods with polythalamous or chambered shells, established by Linnæus, who gave the following as the generic character: ‘Animal (Rumph. Mus., t. 17, f. D) Testa univalvis, isthmis perforata concentrica, polythalamia.’ And he divided the genus into

Spiral rounded.

In which section he placed the species N. Pomptillus, Colcur, Crispus, Becarius, rugosus, umbilicus, Spirula, and seminlivus. Of these, all, except Nautilus Pomptillus, and V. Spirula, the latter of which is separated as a cephalopodous genus under the name of Nautilus, are minute chambered shells, for the most part from the Adriatic Sea.

Elongated, suberect (erectusculi).

In this section the species are obliquus, Raphanistrum, Raphanus, Granum, Radicula, Faccia, Spirula, Flexum, Orthites. Of these, all Angulites, which have the kraniite, and Orthites, and the Asiatic and Mediterranean. Orthites, now established as a fossil genus of cephalopods under the name of Orthites, though described by Linnæus as fossil, seems to have been considered by him as not without a living analogue; in which, however, he was mistaken; for fossils: and he has the following observation:—‘Testa frequentissima petrificata in montibus nostris calcareis, inter omnia fossilia nobis nota sope longissima, non dum viso immutata.’

Lamarck thus characterises the genus Nautilus—

Shell discoid, spiral, multilocular, with simple walls (à parois simples). Whorls contiguous, the last enveloping the others. Chambers numerous, formed by transverse partitions (cloisons), which are concave towards the side next to the aperture; their disk perforated by a tube, and their edges very simple.

Lamarck records only two species, Nautilus Pomptillus and N. umbilicus. For the animal he refers to Rumphius and Denys de Montfort.

Cuvier only, in his last edition of the ‘Règne Animal,’ that Linnæus united in his genus Nautilus the genera Spirula of Lamarck, and the Nautili, properly so called. Of the latter he remarks that they have a shell differing from that of the Spirulae, inasmuch as the lamina tends to be oval, and the last whorls touch, but envelop the preceding whorls. The siphon, he adds, is in the middle of each septum. He refers to the Nautilus Pomptillus of Linnæus as the species most known, and he refers to Rumphius for the animal, observing however, in a note, that the figure of Rumphius is not to be deplored (indecipherable), and that it is matter of wonder that the numerous naturalists who have visited the Indian Seas have not examined or captured so curious an animal, and one which belongs to so common a shell.

M. de Blainville thus describes the genus:—

Animal having the body rounded, and terminated behind by a tendinous or muscular filament, which attaches itself in the siphon with which the chambers of the shell are pierced; mantle open obliquely, and prolonging itself into a sort of hood above, the head provided with tentacular appendages, which are, as it were, digitized, and surrounding the aperture of the mouth.

Shell discoid, but little compressed, with the back rounded or subarcurated, umbilicus cut, but not mammelletted (mamelonæ); the chambers simple, invisible externally; the last deeply hollowed and pierced by one or two siphons. The same zoologist thus divides the genus.

A. Species not umbilicated; back rounded; aperture round a single, subcentral siphon. Example, Nautilus Pomptillus, Linn.

B. Species not umbilicated, with a carinated back and angular opening. (Angulites, De Mont.

Example, Nautilus triangularis.

C. Umbilicated species, with the back rounded and a siphon. (Oenapex, De Mont.

Example, Nautilus umbilicatus.

D. Umbilicated species, with the back rounded and tw. siphons. (Bisipkites, De Mont.

E. Example, Nautilus Bisipkites.

M. Rang, under the genus Nautilus of Linnæus, places also Aganiades, Angulites, Canthrophytis, Oceanus, Bisipkites, and Ammonites of De Montfort. All De Montfort's genera, except Oceanus and Ammonites, are fossil only: he thought he describes as coming from the Moluccas. It is, as far as one can judge from the figure, a very young shell, possibly the young of Nautilus Pomptillus. Nautilus umbilicatus is described as coming from the China Seas, and is, apparently, a specimen of Nautilus umbilicatus. De Montfort considers it as representing a species of Ammonites analagous to the Ammonites, or Cornua Ammonis 'a cloison unis.' He furthers says that he possessed a superb petrification of this Ammonite a foot in diameter. M. Rang gives the following generic character of Nautilus:—

Animal bursiform, lodged partially in the last chamber of the shell, furnished posteriorly with an appendage or particular organ, destined to traverse all the chambers, and placed in a siphon, which serves it as a sheath; mantle prolonged, and furnished with a great number of sessile arms surrounding the mouth.

Shell discoid, regularly spiral, rolled on the same plane, embracing or not, with contiguous whorls; siphon central, or placed 'contre le retour de la spire.'

The animal, he says, is known only from the figure of Rumphius, which leaves so much to be desired. He divides the genus into two subgenera.

I. Subgenus. Nautili, properly so called. Animal, as described in the generic character. Shell with a sipe either embracing or not; chambers united (unies); siphon central, or approximated to the penultimate whorl of the spire, without being contiguous to it.

1st group.

Spire embracing (Genera—Nautilus, Angulites, Oceanus, De Mont.

2nd group.

Spire exposed (à découvert)—(Ammonites, De Mont.

Nautilus umbilicatus, &c.

II. Subgenus (Aganiades, De Mont.

Animal unknown. Shell with an embracing sipe; partition disunited by two interior prolongations of its borders; siphon touch- ing the penultimate whorl of the spire.

All the descriptions of the animal above given seem to have been taken from the figure of Rumphius. We therefore give a copy of this figure, which represents the animal in a supine position. The general form is not inaccurate, but the details are confused, and many of them incorrect, the function
The following is the description of Rumphius, and it has much more merit than his figure:—

'Smooth shell (the Nautilus) is a species of Polyopus (i.e. Cephalopod; Πολύποος, Aristotle; Pouipe, French), but of a particular aspect, moulded according to the concavity of the shell, which it does not quite fill when it holds itself retracted therein.

'The posterior part of the body fits into the bottom of the cavity, while the superior parts (which are inferior when the animal drags itself along the bottom) are flattened, but also rounded off, plaited, and of cartilaginous texture; coloured with brown or washed with red; spotted with blackish marks, which run one into another, as in the Cuttle-fish (Poulpe).

The posterior part of the body, which presses against the shell below the convexity (kiel), and which, in its progression, becomes the superior part, is also a little cartilaginous, but not so much so as the anterior parts, which are covered with a number of cavities (wratten).

In the middle of these parts, in front of the head, there is a considerable lump of little feet, which terminate in fleshy processes laying one over another, and which cover the mouth on each side: these processes are formed like the hand of a child. The largest, or those which are exterior, are terminated by twenty of these fingers or little feet, each as long as half a finger, as thick as a straw, round, smooth, having none of those suckers we see on the feet of the Cuttles, but a little flattened or divided at the end. The great fleshy processes are succeeded by others, which are shorter, and have only sixteen fingers, and these are followed successively by others still shorter, which go on covering even to the mouth.

'The animal can retract or elongate these fingers at will, for they not only serve as feet to creep withal, but also as hands to seize his prey and carry it to the mouth. This mouth is armed by a very hooked beak, formed like that of a Crotato or a Sescat (Sepia). The upper beak is large, hooked, dentated on the edge; the lower beak is small, concealed, or, as it were, shut up in the upper. Both sharp, and calculated to pierce flesh (eleeach). This beak is hard as bone, and its colour of a blackish-blue, surrounded by circular lips of a white colour, fleshy or parchment-like. These are produced sometimes so as to cover entirely the beak, which at other times is almost entirely concealed by a gelatinous deposition, and by the multitude of feet which surround it, so that it cannot be seen without violent means being used.

Supposed animal of Nautilus Pompilius. (Denys de Montfort and Shaw.)

It will be now necessary to go back to the earlier authors, and to inquire whether this animal was known to them. After reading the following passages, few will hesitate to concede that it was known to the father of natural history, Aristotle (Hist. Nat. iv. 1), after well describing the different μαλάξα (naked cephalopods), says, 'There are also two Polyi in shells; one is called by some Nautilus, and by others Nautilus. It is like the Polyopus; but its shell resembles a hollow comb or pecten, and is not attached. This Polyopus ordinarily feeds near the shore; sometimes it is thrown by the waves on the dry land, and the shell falling from it, is caught, and there dies. These are small, and in form like the Boliterna (cephalopods probably, of the form of which Eledone moschata is the type). And the other, continues Aristotle, is in a shell, like a snail; and this does not go out of its shell, but remains in it like a snail, and sometimes stretches forth its arms (or cirri, ναχάλως) externally.'

The first of these Polyi is evidently the Nautilus or Pompilius of Pliny and other antient writers, the argonaut of Linnaeus and the moderns, which is treated of in this work under the title PAPER NAUTILUS.

The second, to which the term Pompilius is now exclusively applied, is, as evidently, the Nautilus of Lamarck, to which genus alone this article will be confined.

Belon figured the shell of the animal, now termed Nautilus Pompilius (and we believe that his figure is the first that appeared) under the name of Nautilus alter seu secundus; but it seems clear that he was unacquainted with
the soft parts. *Rondeletius*, apparently confounding Aristotle's two genera of Polypi, seems to refer the animal of the first to the shell of the second; and dwells on the impossibility of so delicate and feeble an animal dragging about a heavy shell.

Gosner relates that 'Jo. Fauconerus,' a celebrated physician of England, formerly gave him the picture of a *Nautilus*, with a written description (by letter). This description Gosner gives; and it is not improbable that the soft parts described may have been those of *Nautilus Pomptius* (it is clear that the shell was); but the account is so obscure and brief that there is room for doubt, though the term *velum* is used, which would hardly be applicable to the pearly arm or rete of the other.

We now return to the period which followed the publication of Rumphius's figure; and for many years no further information was obtained, though special directions were given by the French and other nations to collectors to be used in procuring the soft parts. These directions were given in vain, and all was conjecture. Fragments even of molluscous animals were caught at and published as probable parts of this much desired animal; and MM. Quoy and Gaimard published their 'Description d'un Fragment de Nautil filamé' (*Nautilus Pomptius*, Linn.), with figures, in the "Annales des Sciences Naturelles" (vol. 20). The materials are not sufficient to come to any safe conclusion as to the animal, of which the fragment was a part; but it may now not be denied that it is any portion of the soft parts of *Nautilus Pomptius*. The paraphyma of the fragment indeed is said to have been identical with that of *Fiorola* and Corinaria. This fragment is preserved at Paris in the Jardin Roi.

The recovery of this interesting animal was reserved for a British voyager; and its structure has been demonstrated and illustrated by Professor Owen in a most masterly manner, leaving nothing to be wished, excepting that some former time we may speedily capture a male specimen, and put it into his skillful hands.

Mr. George Bennett, F.L.S., a member of the Royal College of Surgeons, thus describes the capture of this interesting animal in his 'Wanderings in New South Wales,' &c.:—

'It was on the 24th of August, 1829 (calm and fine weather, thermometer at noon 79°), in the evening, when the ship Sophia was lying at anchor in Marakini Bay, on the south-west side of the island of Erromanga, one of the New Hebrides group, Southern Pacific Ocean, that something was seen floating on the surface of the water at some distance from the ship; to many it appeared like a small dead tortoise-shell cat, which would have been such an unusual object to be seen in this part of the world, that the boat which was alongside the ship at the time was sent for the purpose of ascertaining the nature of the floating object. On approaching near it was observed to be the shell-fish commonly known by the name of the Pearly Nautilus (*Nautilus Pomptius*); it was captured and brought on board, but the shell was shattered, from having been struck with the boat-hook in capturing it, as the animal was sinking when the boat approached, and had it not been so damaged it would have escaped. I extracted the fish in a perfect state, which was firmly attached to each side of the upper cavity of the shell. On being brought on board, I observed it retract the tentacula still closer than before, and this was the only sensation of vitality it gave after being caught; I preserved the soft parts immediately in spirits, after making a rude pen-and-ink sketch of its form. On bringing the lower part of the shell, the chambers or cavities were found filled with water. The hood has been stated by Dr. Shaw (Lectures, vol. ii., p. 168) as being of a pale reddish purple colour, with deeper spots and variegations; the colour however, as it appeared in this recent specimen, was of a dark reddish brown, in fact, resembling the colour produced by the *Koka* on the stained cloth of the Tongatabu natives, intermingled with white. We had fine weather; light winds and calms a day or two previous to this animal being caught.' After noticing the incorrectness of Shaw's figure (which, as we have before noticed, was copied from those given by Denys de Montfort), and the greater general accuracy of that of Rumphius, Mr. White informs us that this species is called *Kika*, Lopha, and Krang Modang by the natives of Aranouma; and *Bia pygmaea*, *Bia copus*, and *Bia capitata*, by the Malays. He then adverts to another instance of the capture of this animal, by an officer of H.M.S. Ariadne, on a reef at the island of Penma near Zanzibar, on the east coast of Africa, in 1824. The animal was not floating upon the water, but was in a hole on the reef, and the officer did not recollect which part of the shell was uppermost. The mantle was turned in as soon as it was touched, when the shell was displayed. 'I and others,' said this officer to Mr. Bennett, 'when it was first seen, did not notice it, regarding the animal, as the membrane of the shell, mere as a large piece of blubber; but having touched it by accident, the membranous covering was withdrawn, and we soon secured our beautiful prize. The fish was a large mass attached to the shell, which we soon extracted and threw away, as we only wanted to collect shells.' The same officer compared the mantle to what he had subsequently seen covering the shells of the *Harpia* (*Entomomorata, vol. ix., p. 452*) and Conases, Cypriides. (Cyprid.)

Mr. Bennett states that a section of the shell captured by him was afterwards made on board, but none of the appearances, nor whether air or water was contained within, could be recollected. A male of a whaler, who had been shipwrecked upon the Feejee Islands in the South Pacific, and had resided among that group for nearly three years, told Mr. Bennett that he had seen the shell of the *Pearly Nautilus*, containing the living animal, floating on the water near one of the islands. He had only seen two living, although the empty shells were very numerous among the islands. The first he saw when in a canoe with some other shipwrecked Europeans; it was the whole of the shell; and it had such an appearance as the membrane of the shell, mere as a large piece of blubber upon the water. On approaching the animal, retracting the mantle, displayed the beautiful striped shell, and sank before they could capture it. (G. Bennett, *Wanderings*, vol. ii.)

The specimen captured by Mr. Bennett is preserved in the museum of the Royal College of Surgeons in London, and has produced the admirable 'Memoir on the Pearly Nautilus (*Nautilus Pomptius*, Linn.), with illustrations of its external form and internal structure,' published by direction of the council of the college, a summary of which we shall endeavour to lay before our readers.

The external form, of which an elaborate description is given, for which we must refer our readers to the 'Memoir' itself, will be collected from the following cuts, which are reduced from Professor Owen's figures.
vertical motion, and in form resembling a parrot's bill reversed, the upper mandible being encased in the lower when they are closed. Posteriorly they are adapted to a muscular basis, to which they owe their motions. 'Thus far, continues Mr. Owen, 'they resemble the mandibles of the Brachyurus Decapod; but the jaw apparatus is not composed entirely of horny matter, nor are they uniformly of a brown or black colour, their extremities being of a dense calcareous nature, and of a bluish-white colour; they are also less pointed at the end, and the oval margins of the lower mandible are notched and dentate.' They differ from the jaw apparatus of the Cuttle-fish. Mr. Owen proceeds to state that the calcareous extremities of both mandibles are of a hardness apparently adequate to break through the most dense crustaceous coverings, or even shells of a moderate thickness. The extremities of the upper mandible are not pointed, and solid to the extent of five lines from the extremity; but in the lower one the calcareous matter is deposited on both sides of a thin layer of the black horny substance, and thus a combination of tough with dense matter is secured, which considerably augments the power of the jaws. This mandible is also more hooked than the upper one, but is more obtuse at the end. 'It seems,' observes Mr. Owen, 'from its dentated margin, evidently intended to break through hard substances, whilst the sharp edges of the Cuttle-fish jaws are adapted to the lacerating and perforating the soft bodies of fish.' In the particulars here stated the mandibles of Nautilus differ, as Mr. Owen remarks, from those of every other known species of recent Cephalopods. The circular lip which surrounds the mouth in the Cuttle-fish has the jaws provided with four retractor muscles, and one for protrusion. The tongue is large, and supported by an oblong horny substance. The fleshy substance is produced anteriorly, and forms three caruncles, which are very soft in texture, and beset by numerous papillae, having all the characters of a perfect organ of taste. The anterior extremity of the horny substance is embraced by a pair of retractor muscles, which arise from the posterior margin of the lower mandible, and four deltidial muscles or retractor muscles of the anterior or terminal caruncle. Behind the caruncles the dorsum of the tongue is encased with a thin layer of horny matter, from which arise four longitudinal rows of slender recurved prickles between one and two lines in length, the same in number as the labial tentacles, viz. 12. There is an analogous structure in the Cephalopoda and in many of the Gastropoda. 'The necessity of such a structure,' says Mr. Owen, 'becomes very apparent in the Pearly Nautilus, if, as Rumphius has asserted, it creeps with the shell uppermost; since in the case of that animal, the tongue, reversed, would be opposed instead of being assisted by gravitation while regulating the movements of the food in the mouth. And it is worthy of remark that in the Flamino, which turns the upper mandible to the ground while taking its food, the tongue is placed so as to give passage to the elongated papillae, as in the Pearly Nautilus, to make the alimentary morsels towards the faucæ.' [FLA-
MINGO, vol.x., p.293.] Behind the horned parts the tongue again becomes soft and papillose, but the papillae are larger and coarser. The only traces of a salivary system detected were in two broad fleshy processes projecting forwards from the sides of the faucæ: they were papillose, and perforated in the middle of their inner surfaces by a small aperture which led into a glandular cavity between the bone and the wall of the tube. From these cavities an opaque whitish substance could be expressed. In the Dibranchiate Cephalopoda these glands are remarkably developed. The alimentary canal, which was filled with the fragments of crustacea, was everywhere connected to the gizzard by numerous filaments; the only trace of a mesentary existed between the last two portions of the intestine, which were connected together by the ramifications of an artery and vein. Among the crustaceous fragments, portions of branchia were common, and palpable when the gizzard was reversed, so as to leave no doubt that the greater part of them had belonged to a Brachyurus Decapod of a hirsute character, and not a swimmer. The crop, which was capacious and pyriform, was densely filled with these fragments, and Mr. Owen remarks that the capability of producing fossiliferous rude and angular particles through a narrow canal into the gizzard without rupturing the tunics of the preparatory cavity is not one of the least extraordinary examples of the powers of living matter. The gizzard very much resembles
that of a fowl, as it does in Octopus. A globular cavity communicates with the intestine at a little distance from the pylorus, and its reception of the biliary secretion renders it in some measure analogous to a gall-bladder; but Mr. Owen thinks that its chief use is probably to pour into the commencement of the intestinal canal a fluid necessary for digestion; so that, like the laminated and spiral coxum of the higher Cephalopods, and the pyloric appendages of fishes, it is essentially a simple form of pancreas. The interior of the alimentary canal, which was filled with smaller fragments of crustaceous shell, presented a few longitudinal rugae and slight transverse puckerings. The liver is bulky, and extends on each side of the crop from the esophagus to the gizzard. There was no trace of structure analogous to the ink-bag of the Dibranchiate Cephalopods.

The preparation, No. 900, b. (Physiological Series) in the museum of the College of Surgeons, exhibits the circulation and respiratory organs of the species now under consideration. The branchial vessels are continued from a series at the hinder part of the head, in number, corresponding to the four branchiae, and have each three clusters of glandular follicles appended to them, representing the branchial saccules. The blood, after circulating through the branchiae, is returned by four branchial venules, which form into the four corners of a transversely oval ventricle. This has been laid open on the opposite side of the preparation to show the columnar carnass within. The blood is conveyed to the system in two arteries, one inferior and large, commencing by a muscular bulb, the other superior, which is seen partially injected with quicksilver. A branch of this artery winds over the ventricle, and is continued downwards into the membranous siphon c, and a white bristle is passed through it along the pericardium, and is led through one of the siphons. The pericardium communicates with the branchial chamber. It is thus that the fluid contained in the siphon has an outlet, and on the supposition that the chambers of the shell contain gas, the sinking and rising of the Nautilus may be regulated by the varying proportions of air and liquid in the chambers of the shell. (Cat.)

Nephridia. The analogy of the system in the Pearly Nautilus is in many respects inferior to that of the Dibranchiate Cephalopods, though it is analogous to it. The part, says Mr. Owen, which corresponds to the brain of the cuttle-fish, is neither enlarged nor lobulated, nor contained in a particular compartment; it is a simple rounded chord or commissure placed transversely above the oesophagus, and connected at its extremities to the great ganglia. These are six in number; are disposed symmetrically about the oesophagus, and, together with the central commissure, are enclosed by a tough membrane, or dura mater. The double oesophageal collar is not peculiar to Nautilus, but is also found in other Mollusks, Aplysia for example; though in these latter the oesophageal ganglia are more remote, the connecting filaments running to them are longer. The details of the nervous system are most clearly explained in Mr. Owen’s Memoir, and beautifully displayed in the 7th plate. In the museum of the College of Surgeons the preparation (No. 1306, a. Physiological Series) exhibits the head and anterior or muscular part of the body of this species placed open longitudinally along the dorsal aspect, and the sides dissected to show this part of the system. The brain, or supra-oesophageal mass, will be seen to consist of a transverse sheet of ganglia at the ends of which three nervous trunks are continued on each side. The anterior pair pass downwards and forwards by the sides of the oesophagus to unite below it, forming a ganglion on either side; these supply the digital processes of the tentacles. The latter give off several nerves to the organ of sense, and the nerves of the great shell-muscles and those of the suckers are given off; the latter nerves are of small size, and are continued down by the side of the great perforated vein, and are analogous in their distribution to the sympathetic nerves of the crustaceans. (Sig.)

The eye of the Nautilus, as might be expected from the comparative inferiority of the brain, is less com
plex than in the Dibranchiate Cephalopods. ‘Indeed,’ says Mr. Owen, ‘it appears to be reduced to the simplest condition that the organ of vision can assume without departing altogether from the type which prevails throughout the higher classes. For although the light is admitted by a single orifice into a globular cavity or camera obscura, yet the parts which regulate the admission and the direction of the impinging rays are entirely deficient.’ The eyes are not situated in orbits, but are attached severally by a pedicle to the side of the head, immediately below the posterior lobes of the head. This attachment to a muscular process is the great marvel, and enables the animal easily to bring it to bear on objects in a variety of situations. ‘Mr. Owen found that the contents of the globe had escaped by the pupil; but he comes to the conclusion, on satisfactory grounds, that if it had ever contained a crystalline substance it must have been very minute.’

Hearing.—Mr. Owen was unable to detect a distinct organ for this sense; but he is inclined to the opinion that there does exist in the Nautilus a distinct organ of passive smell, formed after the type of that organ in the inferior Vertebrata, and especially in fish.

Taste.—The structure of the tongue and the nerves with which it is supplied indicate a considerable development of this faculty; greater, Mr. Owen seems to think, than the analogous parts in many of the Vertebrata.

Touch.—Mr. Owen observes that the papilla upon that part of the head which is termed the hood, if they could be proved to be endowed with nerves, would be peculiar to it among invertebrate animals; but he adds that the great dilatation of the head in those animals has in tracing the nerves in the subcutaneous sheath renders their existence as nervous papilla matter of conjecture only. The numerous tentacles however, soft in their texture, annulated on their surface, and well supplied with nerves, must give the animal an ample enjoyment of the sense of touch.

Generative System.—Aristotle was well aware of the distinctions of sex in the Molusk; and Mr. Owen remarks that the propriety with which that great zoologist classified the animal, although it was covered with a shell to which it adhered like a snail, is fully borne out by the dissection of the female, upon which he operated. The organs consist of an ovary, an oviduct, and, as in the Pectinibranchiate Gastropods, of an accessory glandular apparatus, and are delineated in the eighth plate of Mr. Owen’s Memoir. No. 2431, in the Physiological Series of the Museum of the College of Surgeons, exhibits these organs. The single ovary is lodged in an appropriate peritoneal sac in the posterior part of the abdominal cavity. It is an oblong, compressed leaf-like organ, convex towards the lateral aspect, and on the opposite side having two surfaces sloping away from a middle longitudinal elevation. Its cavity is occupied by numerous ovisacs of different sizes, the largest of which appear to have recently discharged their contents. They present an elongated oval form, and are attached by one extremity to the ovarian capsule, while the other floats freely in the ovarian cavity, and exhibits the rent by which the ovum has escaped. The ovisacs are smooth on their external surface, but present internally very numerous and minute wavy folds. They are principally attached along the line of the external elevated ridge, at which part the nutrient vessels penetrate the ovary. The oviduct is single, wide, and short; it is a continuation of the membranous external covering of the ovum, the thick glandular and fibrous tunic of which presents, at the anterior extremity of the ovum, a distinct perisperm with plicated borders, which projects into the membranous commencement of the oviduct. At a short distance from this part a laminated glandular structure begins to be developed in the tunics of the oviduct, and increases in thickness to the external outlet of the canal. The eggs doubtless receive an outer covering from this gland, and a still more external nidamental coat, with prothesis also a connecting thread from the large nidamental gland, which is here placed over the oviduct. This organ is situated, like the nidamental laminae in the whelk, in the branchial chamber; it is adherent to the mantle, and gives rise to the two round convexitics observable in the entire animal, in the ventral aspect of the body behind the infundibulum. It is a transversely oblong, triobed mass, composed of numerous close-set pectinated laminae, which are about a quarter of an inch in depth, and are disposed in three groups, forming the lobes of the gland; the laminae of the larger group extend transversely across the middle line of the body, and have their free margins unprotected by a membrane; but the two smaller symmetrical groups have these margins covered by a thin membrane, which is reflected over them from the anterior margin of the glandular body; this is analogous to the detached laminated glands observable in the succeeding preparations.

(Cat., vol. iv.)

Habits.—Rumphius says of the Nautilus, ‘When he floats on the water, he puts out his head and all his barbs (tentacles), and spreads them upon the water, with the poop (of the shell) above water; but at the bottom he creeps in the reverse position, with his boat above him, and with his head and barbs upon the ground, making a tolerably quick progress. He keeps himself chiefly upon the ground, creeping sometimes also into the nets of the fishermen; but after a storm, as the weather becomes calm, they are seen in troops floating on the water, being driven up by the agitation of the waves: whence one may infer that they congregate in troops at the bottom. The sailing however is not of long continuance; for having taken in all their tentacles, they upset their boat, and so return to the bottom.’

(Rastri-Kamer.)

Mr. Owen, who quotes this passage, observes that the extent to which the Pearly Nautilus is covered by its shell, and its close attachment to it, indicated the affinity to the Gastropods in too strong a manner to escape the penetration of Aristotle, who, as we have seen, directly compares it in this respect to a snail; ‘ and the general resemblance, says Mr. Owen in continuation, must have been sufficiently striking when, with his house above him and in the supine position, he makes his way along the sand with a moderate degree of rapidity.’

We here give representations of the external appearance of the shells of two species.
membranous tube. Head above with an ambulatory disk. Arms on each side, nineteen. Tentaculiferous labial appendages four, disposed around the mouth. Tentacles (ninety-two) of three kinds, viz.: Ophthalminae, lamellae, on each side two; Brachiula, annulose, on each side twenty; Labial, annulose, on each side twenty-four. The whole body laid up in the last chamber of a large multilocular shell, and ained by two lateral muscles. [Tetrabranchiata.]

The geographical Distribution of the Genus.—The seas of warm climates, especially those of Asia and Africa, and their islands, Amboyna, Zanzibar, and New Guinea; and the Pacific and Australian Oceans.

Fossil Nautili.

The Rhyncholites, formerly considered to be the beaks of birds, are now, upon unquestionable evidence, proved to be the jaws of fossil Nautili and Ammonites. Blumenbach recognised these Rhyncholites as being rather the mandibles of Cephalopoda, differing from all recent genera then discovered; and M. d'Orbigny, who found some large ones in the same beds with the shell of a Nautilus Gigas, suspected that those Rhyncholites appertained to that species.

We here give figures of the mandibles or beaks of the Nautilus Pomptilus, the structure of which is above noticed, and some of these Rhyncholites.

2. Mandibles of Nautilus Pomptilus. a, calcareous extremity of upper mandible; b, extended internal horny lamina of the same; c, notched calcareous extremity of lower mandible; d, external horny lamina of the same.

3. Upper mandible, showing the form of the calcareous extremity, and the proportions of the external and internal horny laminae. e, One-half of the lower mandible, showing the different proportions of the two horni laminae, and the extension of the horny substance at a, upon which the calcareous matter is deposited; f, the internal horny lamina; g, the external horny lamina. Nat. size. (Owen.)

Rhyncholites, upper, side, and internal views.


The colitis (Stonesfield), and the lais of Lyne Regis and Bath, will serve as examples of the British strata wherein these beak-stones occur.

Fossil Nautili occur both in the tertiary and subjacent strata. M. Deshayes (Tables) records four fossil species (tertiary). Dr. Mantell noticed Nautilus imperialis, from the arenaceous limestone or sandstone of Bogor; N. elegans, from the chalk (Lowes); the last-named species and N. exoxus, from the chalk marl; N. inaxoides, from the gault or Folkstone marl (Folkstone); and a nameless species, from the Shanklin sand (lower green-sand). Professor Phillips (Yorkshire) records the following:—N. linatus (inferior olitole); N. astorom (lais); N. hexaxous (Kellowsy rock); N. annulatus (lais); and others in the Speeton clay and Brandonite slaty. Mr. Lonsdale (Oxford) enumerates N. lineatus (lais); and N. obtusus (inferior olitole). Dr. Fitton (Strata below the Chalk) records Nautili elegans, inaquan., liciatus; radians, radians, simplex, undulatus, and an uncertain species, the first-named species from the upper and the rest from the lower green-sand. Mr. Marchion (Silurian System) describes and figures one species, N. undulatus, from the Caracol sandstone.

Dr. Buckland, who, in his 'Bridgewater Treatise,' gives a note describing the Modus operandi of the Nautilus Pomptilus in swimming and sinking, thus concludes his observations upon the affinities of the chambered shell of Conchoides:

"It results from the view we have taken of the zoological affinities between living and extinct species of chambered shells, that they are all connected by one plan of organization, each forming a link in the common chain which connects the living species with those of the earliest conditions of life upon our globe; and all attesting the identity of the design that has effected so many similar ends through such a variety of instruments, the principle of whose construction is, in every species, fundamentally the same.

"Throughout the various living and extinct genera of chambered shells, the use of the air-chambers and spaces, to adjust the specific gravity of the animals in rising and sinking, appears to have been identical. The addition of a new transverse plate within the interior, to make a new air-chamber, larger than the preceding one, to counterbalance the increase of weight that attended the growth of the shell and body of these animals.

"These beautiful arrangements are, and ever have been, subservient to a common object, viz. the construction of hydraulic instruments of essential importance in the economy of creatures destined to move sometimes at the bottom and at other times upon or near the surface of the sea. The delicate adjustments whereby the same principle is extended through so many grades and modifications of a single type, show the uniform and constant agency of some controlling intelligence: and in searching for the origin of so much method and regularity amidst variety, the mind can only rest, when it has passed back, through the indeterminate series of second causes, to that great first cause, which is found in the will and power of a common Creator.

"At page 109 (right-hand column) of this article, line 20 from the top, for 'hand' read 'hood.'

Mr. NAVARTE. JUAN HERNANDEZ, was born at Logroño in Castile. He is commonly known by the name of El Mudo, from having been rendered deaf and dumb by the third year of his age. This added probably to the choice of a profession, in which he made such rapid progress in the school of Fr. Vincenzo, at Madrid, that he was soon able to visit Italy, and especially to study at Venice the works of Titian. After his return to Madrid in 1563, he was appointed painter to the king, s her whom he painted his finest works, which are preserved in the Escurial. Among them are a small picture of the Baptism of our Saviour, the celebrated 'Presepio,' in which the principal light proceeds from the infant Jesus, who is seen by night of the body of St. Lawrence, and the Holy Family, generally considered as his masterpiece, in which the singularity of the accessories is attracted as much notice as the beauties of the composition. His works at Valencia, Salamanca, and Madrid are scarcely inferior to the preceding, and all are distinguished by a brilliancy of colouring which justly gained him the appellation of "Eticano Español."

He died in 1577, aged fifty-three years.

Mr. NAVARETE DOMINGO FERNANDEZ, a native of the Spanish Dominican of the seventeenth century, was sent in 1647 as missionary to the Philippine Islands, from whence he afterwards proceeded to China, where he remained seven years, as head of the missions of his order, studying as the occasion offered the language and general science of the country, and was at last put in prison by the Chinese authorities. He succeeded in escaping to Macao, from whence he returned to Europe in 1673. He gave to the pope an account of the missions in China, in which he expounded the dogma of the incarnation of the Jesus in accommodating themselves.

"Presepio, a stable; a term applied by the Spaniards to that in which a child is born."
several of the superstitions of the natives, in order to increase the number of their pretended converts. This pra-
pose was decided by Nestor. The Dominican, and condoned by a papal decree of the 12th of
September, 1645, of which Morales was the bearer to
The Jesuits however, having obtained from Rome
several modifications of this decree, persisted in their prac-
tices, which Navarrete himself appears to have winked at
while in China.
On his return in 1673, Navarrete went to Rome, where he was well received by the pope. In 1678 he was ap-
pointed to Britain, Spain, and the Indies, and took up his
residence in the West Indies, where he died in the following year.
Navarrete wrote a work in Spanish, which has become very scarce, on the history and the moral and political con-
dition of China, the first volume of which was published at
Madrid in 1676; but the second volume, which contained
an account of the disputes between the Jesuits and the
Dominicans in China, is said to have been suppressed by
the Inquisition. This work is entitled "Tratados histo-
ricos, politicos, etnicos, y religiosos de la Monarchia de China,"
fol., Madrid, 1678. It is a curious publication.
At the end of the first volume are several decisions
and decrees of the popes concerning the regulation of the
Chinese missions.
NAVARRO, called Neocastro by the Greeks, a small
town and fortress of Morea, built on the south coast of
the bay of the same name, about five miles north of Mondon,
and about three miles measured across the bay from old Na-
varino, which is a ruined town with an old fort of the middle
ages, built on a steep hill on the northern coast of the bay,
now occupied by the Turks, was situated on the promontory Corphyusain.
But there was another Pylos in Eleia, and a third one in Try-
phyla, and all three claimed the honour of being the
Pylos Cyprian, which, as it is well known, was occupied by its
inhabitants in the second Messenian war. It seems however
to have revived afterwards, and to be situated in a
mountainous and fertile district.
The island of Sphacteria, or Spaghia, lies across the entrance
of the bay, and adds to its security, rendering it one of the
best harbours in the Levant. Sphacteria is known in antient
history for the defence and capture of the Macedonians by
the Athenians, in the seven years of the Peloponnesian war.
[Thucydi, iv. 38.] [Clonon.] In modern times the bay of
Navarino has become memorable for the naval battle
which took place on the 20th October, 1827, between the French,
English, and Russian combined fleet on one side, and the
Turkish, Egyptian, and other vessels on the other.
The English had three ships of the line and four
frigates, the French three ships of the line and two frigates,
and the Russians four ships of the line and four frigates
and two frigates. The sea was calm. The shore was
fringed with frigates, besides smaller vessels. Admiral Codrington had the
command of the combined fleet, and his object was
to oblige Ibrahim Pasha to evacuate the Morea. After
some desultory negotiations and some evasions on the part of
Ibrahim, Admiral Codrington resolved to attack Ibrahim's
fleet. After a warm resistance, the Turco-Egyptians were
completely defeated, with the loss of three ships of the line,
three frigates, and about forty or fifty smaller vessels. The
fleet surrendered, and a convention follows by which Ibrahim,
whom he had sent to Egypt were restored to their country.
The Egyptian ships which had not been destroyed were
returned to the Pasha of Egypt. The battle of Navarino
deprecated the independence of Greece.
The justice of the attack made by the combined fleets on
the Turco-Egyptians at Navarino has been questioned on
the ground of international rights, supposing those rights to be
applicable to a semi-barbarous power as the Turks then were.
It was contended that they were not entitled to be
considered war.
Navarre yields more valuable timber than any other province of Spain. Heat, furs, and broom, with many aromatic plants, grow on the mountains. Of grain Navarre yields annually 3,452,000 bushels, of which about 2,053,550 are of wheat, 303,550 of maize, 673,200 of barley, 308,000 of oats, and the remainder of other grains and of corn. Of vegetables (including chestnuts) the annual quantity is about 197,600 bushels, of which the principal part are broad and kidney beans. The annual produce of hemp is 600,000 lbs., of flax 200,000 lbs., of olive-oil about 130,000 gallons, and of wines, which are excellent, and of various descriptions, about 10,500,000 gallons. After a rich vintage people are invited by the public crier to take the old wine away from particular vats in grins, in order to make room for the new. The old wine is then wasted some time, and allowed to run down the streets. A small quantity of cider is also produced in the Bastan and Cinco Villas.

According to Miñano, there are in Navarre about 38,000 head of horned cattle, 630,000 sheep, 70,000 goats, 32,000 pigs, and 26,000 mules. The annual produce of wool amounts to 1,412,000 lbs. The mountains abound in game and the rivers in fish. The average value of all the natural productions of Navarre, animal, vegetable, and mineral, Miñano estimates at nearly 1,500,000 lbs. The sheep of Navarre are the best in the province. The viceroy, composed of the University, the Royal, and the viceroy, maintained. The manufacture of wool is considerable. There are 634 factories of coarse linen, 319 of woollen cloth, 67 of leather, 12 of soap, 30 of iron, and of brandy the quantity annually, and the produce averages 2,000,000 gallons. Besides these, there are some potteries, a royal shod and shell foundry, and some manufactories of Spanish liquorice. At the commencement of the present century the average value of manufactures was 142,600£ per annum.

The great size of the produce, natural and manufactured, is consumed in the province, but about 30,000 English bushels of grain, a little oil, half the wine, the greater portion of the wool, and two-thirds of the iron annually remain unexported, and the remainder exported, which is only a small amount of the silks and cottons, cutlery, tobacco, sugar, spices, and other luxuries imported, principally from France.

Navarre is divided into five districts, or merindades, as the inhabitants are called there. Pamplona, in the north, of Tudela in the south, Sanguesa in the east, Estella in the west, and Olite in the centre. Each merindad has a capital town of the same name. The kingdom contains 9 cities, 145 towns, 675 villages, with a total of 35,299 houses. It has two bishops, those of Pamplona and Tudela; 733 parishes, 70 convents and hermitages, 1 university, 4 colleges, and 12 hospitals.

The metropolis is Pamplona, situated on an eminence on the left bank of the river Arga, a branch of the Arga, at the foot of the mountain called La Cucuera, enclosed by lofty mountains. It was antiently the court of the kings of Navarre, is still the residence of the viceroy of the province, the seat of administration, and see of a bishop, suffragan of Estella. The city is walled into twenty wards, and the central (a neat Gothic edifice of great antiquity, disfigured by a modern façade), 4 paroch churches, 7 convents of monks and 2 of nuns (suppressed in 1833, because under the authority of the queen), a royal and an episcopal palace, a senate-house, a fowling-hall, a mint, a public garden, a university, an hospice, a founding hospital, a theatre, 41 inns, 1632 private houses, and a population of 15,000. The city, including the citadel, measures 960 yards north and south, and 300 from east to west. It is ill built, but contains few handsome houses; the streets are narrow, but well paved, and kept thoroughly clean by means of sewers. There are 3 large and 3 small squares, in the largest of which bull-fights are occasionally held, 6 public fountains, and an aqueduct by which the city is supplied with water from the mountain of Subiza, twelve miles distant. Pamplona is well fortified; the citadel is a regular pentagon, of 1000 feet each side; it was built by Philip II. There is a beautiful promenade, called Las Tacones, within the walls. The manufactories are very trifling, namely, two tanneries, two factories of wax, one of woollen cloth, and one of guitar-strings, besides a paper-mill and six corn-mills on the Arga. Its commerce is limited to the importation of silk and silken goods, principally from England and France; but some cloth is imported from Castile, serges and silk from Aragon, and a little Indian silk from Cadiz.

Pamplona is called Pompelon by St rabe (161). Cadiz, who adds, 'as if it might be Pompeopolis,' that is the city of Pompey. The people are called Pompelonoens by Pliny (iii. 3). The name of the city was corrupted by the Arabs, who took it in the beginning of the eighth century, into Pamplona; but in 714 it was defended by the French, but afterwards rebuilt. In 907 it was besieged by the Moors, and in 1138 by the Castilians, but on both occasions it maintained a successful resistance. In 1200 it was burned by the English, and in 1212 it was blockaded and taken by the duke of Alba, general of Ferdinand the Catholic. In 1808 it was seized by the French, who had been allowed to enter as friends; in 1812 blockaded by Mina; and in 1813 it capitulated to the French and Spanish allies under the duke of Wellington, after the battle of Vitoria.

The city next in importance is Tudela, situated on the right bank of the Ebro, which is here crossed by a very fine bridge of seventeen arches and 1200 feet in length. It has a cathedral, 10 convents ( lately suppressed), 2 hospitals, and a population of 8150. The streets are narrow and crooked, but well cleansed; the houses are lofty, and all contain fountains. About two miles east of Tudela is the commencement of the canal of Aragon, which, when finished, is to connect Navarre with the Mediterranean.

The other cities are—Estella, a town lately fortified by the Carlists, with 4600 inhabitants, recently the stronghold of Don Carlos; Olite, with 5000 inhabitants, celebrated for its beautiful citadel. The chief persons are—4 archbishops of Navarre; Corella, with 4000; Tafalla, with 2800; and Sanguesa, with 2200 inhabitants.

The political constitution and laws of Navarre are all the same which it enjoyed when an independent monarchy. Its courts and judicial offices are conducted by the viceroy, who presides at the royal council, and the supreme tribunal for civil and criminal causes. The legislative body is composed of the three estates of the kingdom: the clergy, who attend by right of their offices; nobles, by right of the name and rank of their ancestors; and deputies, who are elected by the people. Navarre enjoys also peculiar local privileges.

The inhabitants of Navarre are tall, well made, brave, indomitable in spirit, strongly attached to their government and religion, and jealous of their privileges. The guerrilla bands under Mina proved most formidable opponents to the French in the War of Independence. The Navarrese are also grave and modest, and their simple, unpretending manners, make them industrious and honest.

Castilian is the general language of the province, but the Basque, or a mixture of these two languages with French is spoken in some districts.

The principal products of Navarre were called Vascones by the Romans. In a.d. 470 they were subdued by the Goths. Early in the eighth century Navarre was conquered by the Arabs; but the Christian inhabitants who had suffered among the Pyrenees, resolving to expel the invaders, chose a noble knight, Garcia Ximenes, for their chieftain or king; and thus was founded the monarchy of Navarre. His family became extinct in the middle of the ninth century, and the Navarrese then elected kings for the title, count of Bigorre, in the hands of whose descendents the sceptre of Navarre remained for five centuries. In 1512 Ferdinand the Catholic obtained possession of this part of the ancient kingdom of Navarre which forms the present province, and annexed it to the Spanish crown. In 1716 Charles of Anjou, nephew to Louis XIV., resolved to expel the Pyrenees, which was afterwards united by Henri IV. to the crown of France, and is now known as the department of the Lower Pyrenees. On the invasion of Spain by Bonaparte, Navarre was left by the Austrians by its obstinate resistance; and it has recently attacked the eyes of all Europe as being, with Biscay, the principal theatre of the civil contest between Don Carlos and Isabel II. of Spain.

Mint. Duc. Grog.; Laborde, Itineraire Descriptive de l'Espagne; Antonio, Geografia de España y Portugal, 1834; Bowles, Introduccion a l'Historia Natural de España; Cook's Sketches in Spain; Marian, Historia General de España, 1837; Lebrun, Description de la Navigation de woods, etc.

NAVARRE, BASSE. [PYRENÉES, BASSES.] NAVRA. [CHRUCHE.] NAVICELLA. [NERIDIR.]
NAVIGATION. [COMPASS; LONGITUDE AND LATITUDE; METHODS OF FINDING; MERCATOR'S PROJECTION; SAILING.]

NAVIGATION LAWS. [SHIP AND SHIPPING.]

'NAVIGATOR'S ISLANDS,' a group of islands, situated in the Pacific, between 10° and 15° S. lat. and 185° and 195° E. long., consists of nine islands, of which the largest, called Pola, or Chatam, is the most western. It is twice as large as the city of New York, and is formed of coral reefs, only fifty feet high, and are made up of pieces of lava, rounded basalt, or coral, by which the islands are wholly surrounded. In the coral reefs are narrow passages for boats. Along the beach are level tracts, but at some distance the country rises into hills and mountains. The inhabitants belong to the Malay race, and speak a language which is a dialect of that used in the Friendly Islands. They are averse to the visits of Europeans, and much incline to barter with them. (La Perouse's Voyage round the World.)

NAVY. Before we describe the present constitution and force of the British navy, we shall give a short sketch of the rise and progress of that vast machine, to which England is indebted for her power and prosperity, and which she enjoys, commencing with the origin of naval enterprise among our barbarian ancestors.

All nations inhabiting the shores of the sea or navigable rivers, from time immemorial, have made use of vessels of rude construction. But these were so inadequate to withstand the winds and waves of our northern seas, that it was not until the reign of the emperor Probus, A.D. 276-82, that the veil of terror hanging over the ocean and distant voyages was broken. The first attempt at colonising the border lands, which were exhausted by war, with people from the crowded countries of the barbarians, had carried a party of Franks into Pontus, with a view of defending that country against the Alani. Love of home induced some of these people to attempt their return; they seized ships on the Euxine, and plundered the coasts of Greece, Asia, and Sicily, either to supply their wants or for revenge: passing the Pillars of Hercules, they veered to the right, and made straight for the coast of Spain, to 100 tons, or the mouth of the Rhine. From this voyage we may date the origin of nautical enterprise. The Saxons took advantage of the rich harvest thus opened to all who would attack the Roman provinces by sea, and ravaged the coasts to such an extent as to cause the evacuation of a tract of the coast of Phœnix. The old name of the English Channel was thus derived. After the Saxons had been long in possession of England, they lost their naval arts, and in their turn became a prey to the constant attacks of the Sea-kins, Vikings, and other pirates. We have no record of the size or number of the vessels which sustained so many conflicts with the Danes in the ninth century. Alfred the Great was the founder of the English navy. He first perceived the necessity of a fleet to protect the coasts from the marauding parties in the north; and he was able to advantage gained by some ships of his over the Danes, in 876, induced him to build long ships and galleys, which, as his countrymen were not competent to manage them, he manned with such foreign sailors as he could engage. After he had driven out the Danes, he applied his talents to improve his ships, and built vessels higher, longer, and swifter than before, some rowing thirty pairs of oars, others more. Etheledred made a law that whoever was lord of 310 hundredsheds was ordered to furnish and build one vessel for the service of the country.

William the Conqueror established the Cinque Ports, and gave them certain privileges on condition of their furnishing 52 ships for 15 days, in case of emergency. King John promised to assist them in wars; he had declared that all ships belonging to foreign nations, which should refuse to strike to the British flag, should be deemed lawful prize. In the year 1293, an English sailor having been killed in a French port, was enraged, which it was agreed should settle by a naval action, which was fought in the middle of the Channel, and the English, being victorious, carried off above 250 sail. In 1340, when King Edward III. with 240 ships was on his voyage to Flanders, he fell in with and completely defeated a Spanish fleet of 400 sail, manned with 40,000 men. The same monarch blockaded Brest with 730 sail, containing 15,000 men. Many of the ships composing these fleets were Genoese and Venetian man-o'-war, but they must have been very small, and the numbers of ships and men much exaggerated. Henry V. had something of a navy, for we find among the records in the Tower, a grant under his hand of annuities to 'the masters of certain of our owne greate ships, and barkes, ballesteres, and gunnes.' That Prince, who succeeded in 1415, seems to have been the first king who thought of providing a naval force which might be at all times ready for the service of the state. He built the Great Harry, properly speaking the first ship of the royal navy; she cost 13,000L., and was accidentally burnt in 1425; Henry VIII. perfected the designs of his father. He constituted the Admiralty and Navy Office, established the Trinity House, and the dockyards of Deptford, Woolwich, and Portsmouth; appointed regular salaries for the admirals, captains, and sailors; and made the sea service a distinct profession: he also made laws for the planting and preservation of timber. In 1512, when a fleet was fitted out against France, under Sir Edward Howard, lord-high-admiral, the following officers were appointed:

- For his own diet, maintenance, wages, and e. d.
  - Rewards, per diem
  - Each captain for ditto, ditto
  - Every soldier, mariner, and gunner, for his wages per lunar month
  - And for his victuals

The ships of this period were high, unwieldy, and narrow; their guns were close to the water, and they had lofty poop and pows, like Chinese junks, inasmuch that Sir Walter Raleigh informs us that the Mary Rose, a goodly ship of the largest size, by a little sway of the ship in casting about, her ports being within 16 inches of the water, was overset and sunk. This took place at Spithead in the presence of the king, and made his majesty so angry at such unskilful navigation. The Henri Grâce de Dieu, the largest ship built in this reign, is said to have measured above 1000 tons. At the death of Henry VIII., the tonnage of the navy was 12,000 tons. Elizabeth increased the navy yearly. The fleet which met the Spanish Armada numbered 176 ships, manned by 14,996 men; but these were not all 'ships royal, for she encouraged the merchants to build large ships, which on occasion were converted into ships of war, and rated to 1700 tons. They measured 1800 fathoms, and their wages of seamen to 10 shillings per month. Signals were first used in this reign as a means of communication between ships. In 1603 the navy had 42 ships, measuring 17,000 tons. In the reign of James I. lived the first able and scientific naval officer of England, Sir Henry Slingsby. Both he and his friend Norris were able to encourage him. Pett introduced a better system of building, and relieved the ships of much of their top hamper. Before the civil wars broke out, Charles I. built the Sovereign of the Seas, of 100 guns, and measuring 1637 tons. In this reign the navy was first divided into rates and classes. Cromwell found the navy much reduced, but his energy restored it, and he left 154 sail, measuring 57,643 tons, of which one-third were two-deckers. Cromwell first laid before the state the need of the navy, and obtained 400,000L. per annum for that purpose. The navy flourished under Charles II., with the duke of York at its head, assisted by Samuel Pepys, as secretary, until 1673, when the duke's inability to take the test oath caused his retirement, and the king's pecuniary difficulties leading him to neglect the navy, it fell into decay. The duke of York was recalled to his post in 1684, and at his accession in the following year there were 179 vessels, measuring 130,318 tons. James II. made the king to provide extensive measures for the restoration of the navy; he suspended the Navy Board, and appointed a new commission, with which he joined Sir Anthony Deane, the best naval architect of the time, who essentially improved his ship, the Royal George. Four hundred thousand pounds per annum were set apart for naval purposes, and so diligent were the commissioners that at the Revolution the fleet was in excellent condition, with sea stores complete for eight months for each ship. The force was
154 vessels, carrying 6930 guns, and 42,000 men, of which nine were first-rates.

King William immediately on being placed on the throne went to war with France, whose navy was then very powerful; in 1681 it consisted of 179 vessels of all sorts, carrying 7080 guns, besides 30 galleys. An act was passed in his second year, for building 30 ships, to carry 60, 70, and 80 guns respectively. The dockyard at Hамaea, out of which has since grown the celebrated dockyard of Devonport, which now returns two members to parliament, was then established. Queen Anne found at her accession the navy to consist of 272 vessels, measuring 139,020 tons, but this estimate includes hulks, boys, and other vessels not carrying guns. In 1704 one of the greatest and most destructive storms ever known took place. It began in the middle of November, and did not attain its greatest height till the 27th. The Eddystone lighthouse was destroyed, no less than 10 men-of-war were totally lost, and many more were driven on shore and destroyed. All measures adding to the strength and efficiency of the navy were exceedingly popular during this reign. We find at the death of Anne in 1714, that the number of ships was less, but the tonnage increased, being 198, guns 10,600, tons 156,840. The parliamentary vote of that year was 245,700l. and 10,000 seamen and marines. During the first four years of George I., large sums were voted for the extraordinary repairs which were required after the long war. A new establishment of guns also was ordered in this reign. The navy remained stationary till 1739, when hostilities commenced against Spain, and the navy was augmented, particularly in the smaller classes, and the dimensions of several classes were enlarged. War broke out with France in 1744, at which period there were 128 sail of the line. At this time all prizes taken by H.M.'s ships were declared to be the property of the captors. In 1747 a naval uniform was first established. The navy increased vastly during this war, in which 35 sail of the line were taken or destroyed by the English. George III. at his accession found the navy to consist of,

<table>
<thead>
<tr>
<th>Ships of the line</th>
<th>127</th>
<th>measuring 321,104 tons.</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 guns and under</td>
<td>198</td>
<td></td>
</tr>
</tbody>
</table>

The vote for the year 1760 was 432,629l. and 70,000 seamen and marines. In the short war of 1762, 20 sail of the line were added to the navy, and at the end of the American revolutionary war it was composed as follows:

<table>
<thead>
<tr>
<th>Sail of the line</th>
<th>174</th>
<th>about 500,000 tons.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under</td>
<td>203</td>
<td></td>
</tr>
</tbody>
</table>

The navy was kept in a high state of preparation, and when, on the 1st of February, 1793, the French republic declared war against England, this country was not unprepared. A period now commences in which the gigantic efforts made by England, and the protection necessary for a mercantile marine, which almost monopolised the commerce of the world, raised the British navy to such a height as to enable it single-handed to maintain the sovereignty of the seas against all other navies combined. Sir Charles Middleton, afterwards Lord Barham, had, when comptroller of the navy in 1783, established the regulation that a great proportion of stores, sails, &c. should be laid by for each ship in ordinary; so that in a few weeks after the declaration of war there were 54 sail of the line and 146 smaller vessels at sea. The vote for the service of the navy was 5,525,331l., 85,000 seamen and marines. The navy of France had never been so powerful as it amounted to above 200 vessels, of which 82 were of the line and 71 in addition were immediately ordered to be built. The English had about 115 sail of the line fit for service, but the majority of the French ships were larger and finer, and carried heavier guns on their lower or principal battery. The following abstract will show the losses on both sides up to the peace of Amiens, exclusive of the casual losses.

<table>
<thead>
<tr>
<th>British ships of the line</th>
<th>Captured.</th>
<th>Destroyed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smaller vessels</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>French ships of the line</th>
<th>Captured.</th>
<th>Destroyed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Dutch do.</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Spanish do.</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Danish do.</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>16</td>
</tr>
</tbody>
</table>

The following tables will show the force of the British navy at three distinct periods, viz.: the breaking out of the French revolutionary war; a few years subsequent to the peace; and the present time: also the disposition of the British naval forces at the present time, as well as the naval force of other countries possessing a navy.
Prince Regent in a memorial. The present establishment of rates and classes was fixed by order in council, February, 1917.—

Class I.—Rated ships:

First-rate, comprising all three-decked ships.

Second. One of Her Majesty's yachts, and all two-decked ships whose war-complements consist of 700 men and upwards.

Third. Her Majesty's other yachts, and all ships whose complements are from 600 to 700.

Fourth. Ships whose complements are from 400 to 600.

Fifth. Ships whose complements are from 250 to 400.

Sixth. Ships under 250.

Class II. Sloops and bomb-vessels.

All such vessels as are commanded by a commander.

Class III. All other smaller vessels, such as are commanded by lieutenants, or other inferior officers.

Table showing the armament of a ship of each class, and the weight of metal.

<table>
<thead>
<tr>
<th>Number of Guns in Each Ship</th>
<th>Lower Deck</th>
<th>Middle Deck</th>
<th>Main Deck</th>
<th>Upper Deck</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Description &amp; Weight</td>
<td>Description &amp; Weight</td>
<td>Description &amp; Weight</td>
<td>Description &amp; Weight</td>
</tr>
<tr>
<td>198-gun ship (old)</td>
<td>4 8-inch 65</td>
<td>2 8-inch 65</td>
<td>32-pdrs. 62</td>
<td>6 32-pdrs. 65</td>
</tr>
<tr>
<td>110-gun ship (new)</td>
<td>4 8-inch 65</td>
<td>2 8-inch 65</td>
<td>32-pdrs. 62</td>
<td>6 32-pdrs. 65</td>
</tr>
<tr>
<td>92-gun ship</td>
<td>4 8-inch 65</td>
<td>2 8-inch 65</td>
<td>32-pdrs. 62</td>
<td>6 32-pdrs. 65</td>
</tr>
<tr>
<td>84-gun ship</td>
<td>4 8-inch 65</td>
<td>2 8-inch 65</td>
<td>32-pdrs. 62</td>
<td>6 32-pdrs. 65</td>
</tr>
<tr>
<td>60 guns</td>
<td>2 8-inch 65</td>
<td>2 8-inch 65</td>
<td>32-pdrs. 62</td>
<td>6 32-pdrs. 65</td>
</tr>
<tr>
<td>79</td>
<td>4 8-inch 65</td>
<td>2 8-inch 65</td>
<td>32-pdrs. 62</td>
<td>6 32-pdrs. 65</td>
</tr>
<tr>
<td>70</td>
<td>4 8-inch 65</td>
<td>2 8-inch 65</td>
<td>32-pdrs. 62</td>
<td>6 32-pdrs. 65</td>
</tr>
</tbody>
</table>

Frigates.

| 50 guns, 1st class          | 6 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 50 guns, 2nd class          | 6 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 44 guns                     | 6 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 49 guns                     | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 38 guns                     | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 36 guns                     | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 56 guns                     | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 26 guns, corvettes          | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 26 guns, 2nd class          | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 26 guns, 3rd class          | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |

Sloops.

| 18 guns, corvettes          | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 18 guns, dism., 2nd class   | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 18 guns, dism., 3rd class   | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 16 guns, briggs             | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 62 | 6 32-pdrs. 65  |
| 16 guns, dism., 3rd class   | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 65  |
| 12 guns, dism., 4th class   | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 65  |
| 12 guns, dism., 5th class   | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 65  |
| 12 guns, dism., 6th class   | 2 8-inch 65 | 2 8-inch 65 | 32-pdrs. 65  |

Great improvements have taken place in the size and form of the British ships, as well as in the arrangement of the materials composing them, especially during the present century. As France and Spain enlarged their ships, the English were obliged to do the same; while from many of their ships added to the English navy we greatly improved our models. The following view of the increase of the size of first-rates will demonstrate this point:
There is now a frigate of greater tonnage than the frigate of 1743, viz. the Vernon, of 2080 tons, and 50 guns.

We cannot do more than glance at the improvements in naval architecture. Sir Robert Seppings, late surveyor of the navy, has published the circumspection, or system, of diagonal timbering or bracing, whereby the strength and durability of our ships are so immensely increased; the method of scarfing short pieces, by which the delay and difficulty often attendant on the procuring of crooked timber are avoided; the making fir-timber applicable to the building of line-of-battle ships, by the use of a circular coak, or dowel, instead of chocks, thereby effecting a saving of about 1000 lb. in the building of a 74-gun ship, and the use of iron knees, by which he effected an immense saving of timber and space.

Sir William Symonds, now surveyor of the navy, has effected a still further economy of space by removing the chocks behind the iron knees, and using metal diagonal braces instead of wood. In this he has followed the various naval architects, Sir R. Seppings, Captains Hayes and Symonds, R.N., and Professor Inman, have been permitted to try their respective systems in various experimental squadrons, composed of vessels built under their directions; and although opinions are of the merits of each, there can be but one with regard to the general advantage arising to the science of naval architecture, so long neglected.

A school for shipwright apprentices was established at Portsmouth, which, after producing more officers than could be provided for, was broken up. Our ships, those at least built of oak—for we have not yet worn out a ship built of teak—do not seem to be as durable as in former times. The Royal William, of 100 guns, which bore the flag of the late Richard Bickerton, in 1813, and was completely after broken up, was built in the year 1719. The Sovereign of the Seas, built in 1637, was repaired in 1684, when all the antient timber was so hard that it was difficult to work it. It was the practice in the north of England, and in Staffordshire especially, to bark timber standing, and to let it remain in that state for a time to season. The Sovereign of the Seas was built of such timber. The Achilles, 60, was built by contract in 1757, of timber barked in the spring and felled in the next winter; she was done with and fitted out in two years, and was sold in 1784, because she was too small for the line-of-battle. The Hawke sloop was built in 1793. Half of this vessel was built of timber barked in 1787, and felled in 1790; the other half of timber felled in the usual manner from the same piece of wood. In 1803 she was so decayed that she was taken to pieces; both sides appear to have been equally decayed.

The government of the navy is vested in the lord-high-admiral, which office has been in commission since the Revolution, with the exception of two short periods, 1677-8 and 1827-8, when it was held respectively by Prince George of Denmark and his late majesty when duke of Clarence. At present the Board consists of a First Lord, who is a member of the cabinet, and five junior lords. By their orders all ships are built, sold, or broken up; commissioned, employed, and paid off. All appointments and promotions are made or approved by them; all honours, pensions, and gratuities are granted on their recommendation. All orders for the payment of naval monies are made by them; they prepare the navy estimates, and lay them before parliament. The civil departments of the admiralty are directed by the surveyor of the navy, accountant-general, storekeeper-general, secretaries, and master of his majesty's ships. The naval pay is divided into two classes, men and seamen.

There are commissioned, warrant, and petty officers. The commissioned officers are flag-officers, captains, commanders, and lieutenants. Flag-officers are divided into the following classes, and rank and command in the order here following:—

1. Admirals of the fleet.
2. Admirals of the red, white, blue squadrons.

There are superannuated and reversionary, or rear-admirals, who enjoy the rank and pay, but do not rise. The admiral of the fleet, when in command, bears the union flag at the main-top-gallant-mast. The other flag-officers bear a square flag of the colour of their squadrons at the main, fore, or mizen top-gallant-mast, according to their rank.

The flag-officer holding the chief command of a fleet or squadron employed within certain geographical limits, termed a station, is called a commander-in-chief. He is responsible for the discipline and conduct of the fleet under his orders; he disposes of the vessels composing it in such manner as will be most advantageous for the service; but without some especial necessity he is never to send one beyond the limits of his station. All vacancies in ships under his orders which are caused by death or discharge from the service by the sentence of a court-martial, are in his gift.

A temporary rank is given to captains called commodore; they are of two classes; in the first, having the pay and allowance of a rear-admiral, with a captain under him; the other, a broad pendant, but must strike it in the presence of a senior captain. Captains and commanders are appointed to command her majesty's ships, except when the latter are employed in a long cruise, when her majesty may require the promotion of his late majesty when lord-high-admiral; in which case they must have served three years in command of a sloop or as first-lieutenant of a rated ship.

When a captain or commander is ordered to command a ship, he is nominated for a warrant officer, and is entitled to wear this pendant, having a St. George's cross on a white field next the mast, and a fly of the colour of the admiral's flag under whose orders he is placed. No vessels, except such as belong to her majesty, or are hired for her service, and commanded by a naval officer, are entitled to wear this pendant. The ship being commissioned, a hulk, or receiving ship, is allotted for the use of the crew while fitting for sea; a party of marines, commanded in rated ships by a commissioned officer, is sent on board the same as soon as it is considered fit for the service after being subjected to the surgeon's orders. The stores are demanded as required, and the sea-stores, provisions, and water stowed away. When ready for sea, the ordinance and powder are received on board; the crew are paid for the months they have served, and the sowing orders from the admiralty to proceed to destination. The duty of the captain as regards the books and accounts is regulated by act of parliament; but the internal arrangements and discipline depend mainly on himself. A first-majesty fur vessel is called the Articles of War, and the General Printed Instructions issued by the admiralty. All muster and pay books, &c. are signed by the captain, commander, or senior lieutenant, master, and purser, or other officer in whose charge the stores are in any way situated. A senior must have been employed on actual service and full pay for one complete year to become eligible for promotion to the rank of captain.

The senior lieutenant is nominated by the captain, and has under his direction the whole management and superintendence of the internal arrangements of the ship; indeed on the qualifications of this officer must in a great measure depend the state of discipline and efficiency. The officer of the deck must take the watch by turns, during which time he has charge and command of the ship; they are never to quit the deck without being relieved. The watches are periods of four hours, except that from four to eight p.m. which is divided into two, called the dog-watches. No warrant or petty officer is allowed to take the command of any vessel in which he has served six complete years in the navy, has completed his thirty-eighth year, and passed in seamanship and navigation. A lieutenant must have served two complete years at sea to qualify for promotion to the rank of commander. The warrant and petty officers are ranked in the order in which they stand in the table of pay, with the exceptions here following:—

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vice-admirals of the red, white, blue squadrons.

Rear-admirals of the red, white, blue squadrons.

First-majesty fur vessels.
<table>
<thead>
<tr>
<th>Commodore of first class and captain of the fleet</th>
<th>3 0 0</th>
<th>of their rank.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of the fleet</td>
<td>0 1 0</td>
<td>11 6 0 0</td>
</tr>
<tr>
<td>Physician of less than ten years</td>
<td>1 1 1</td>
<td>11 6 0 0</td>
</tr>
<tr>
<td>Physician of more than ten years</td>
<td>2 2 0</td>
<td>11 0 0 0</td>
</tr>
<tr>
<td>Secretary to admiral of fleet</td>
<td>1 7 4</td>
<td>0 0 0 0</td>
</tr>
<tr>
<td>Secretary to admiral commander-in-chief</td>
<td>1 1 1</td>
<td>0 0 0 0</td>
</tr>
<tr>
<td>Secretary to vice or rear admiral commander-in-chief</td>
<td>0 1 6</td>
<td>0 0 0 0</td>
</tr>
<tr>
<td>Secretary to a junior flag-officer or commodore</td>
<td>0 8 2</td>
<td>0 0 0 0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Full-Pay.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Two clerks to secretaries of commanders-in-chief, each</td>
<td>3 4 0 0</td>
</tr>
<tr>
<td>One clerk to junior flag-officers</td>
<td>2 9 0 0</td>
</tr>
<tr>
<td>Admiral's coxswain</td>
<td>1 9 0 0</td>
</tr>
<tr>
<td>Admiral's steward</td>
<td>1 2 0 0</td>
</tr>
<tr>
<td>Admiral's cook</td>
<td>1 2 0 0</td>
</tr>
<tr>
<td>Admiral's domestics*</td>
<td></td>
</tr>
</tbody>
</table>

*The number of these ratings, for the
Admiral of the fleet                             | 12 0 0 0 0 0 0 |
Admiral                                         | 10 0 0 0 0 0 0 |
Vice-admiral                                    | 7 0 0 0 0 0 0 0 |
Rear-admiral or commodore of 1st class           | 5 0 0 0 0 0 0 0 |
Captain of the fleet                             | 3 0 0 0 0 0 0 0 |

In flag-ships all the lieutenants (including one extra as flag-lieutenant) are allowed 6d. per diem additional pay.

Surgeons are paid according to their length of service.

| Surgeons of hospital-ships                      | 0 1 8 0 0 0 0 0 |

<table>
<thead>
<tr>
<th>Half-Pay.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Captains</td>
<td></td>
</tr>
<tr>
<td>Per Diem</td>
<td></td>
</tr>
<tr>
<td>Of less than six years' service</td>
<td>0 1 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Of more than six and less than ten</td>
<td>0 1 1 0 0 0 0 0</td>
</tr>
<tr>
<td>Of more than ten and less than twenty</td>
<td>0 1 4 0 0 0 0 0</td>
</tr>
<tr>
<td>Of more than twenty</td>
<td>0 1 8 0 0 0 0 0</td>
</tr>
</tbody>
</table>

| Surgeons of hospital-ships                      | 0 1 8 0 0 0 0 0 |

The following abstract shows the daily allowance of provisions to every person in the fleet:

- **Fresh meat**, 1 lb.
- **Vegetables**, ½ lb.
- **Beer**, 1 gallon.
- **Salt beef**, ½ lb.
- **Salt pork**, ½ lb.
- **Flour**, ¼ lb.
- **Pease**, ¼ pint.
- **Biscuit**, 1 lb.
- **Spirts**, 3 pints, or wine, 1 pint; and, whether on fresh or salt provisions.
- **Coccon**, 1 oz.
- **Vinegar**, 4 pints weekly.
- **Sugars**, 1 oz.

A portion of the flour may be exchanged for a proportion of salt and raisins; and after 14 days on salt provisions, lemon-juice is allowed in addition.

The following tables will show the full-pay of every officer and seaman in each class of her Majesty's ships, and the half-pay of all officers entitled to the same:

<table>
<thead>
<tr>
<th>Full-Pay.</th>
<th>Half-Pay.</th>
</tr>
</thead>
<tbody>
<tr>
<td>£. s. d.</td>
<td>£. s. d.</td>
</tr>
<tr>
<td>Admiral of the fleet</td>
<td>6 0 0</td>
</tr>
<tr>
<td>Admiral</td>
<td>5 0 0</td>
</tr>
<tr>
<td>Vice-admiral</td>
<td>4 0 0</td>
</tr>
<tr>
<td>Rear-admiral</td>
<td>3 0 0</td>
</tr>
<tr>
<td>Commodore of first class and captain of the fleet</td>
<td>3 0 0</td>
</tr>
<tr>
<td>Master of the fleet</td>
<td>0 1 0 11</td>
</tr>
<tr>
<td>Physician of less than three years</td>
<td>1 1 0</td>
</tr>
<tr>
<td>Physician of more than ten years</td>
<td>1 1 1</td>
</tr>
<tr>
<td>Secretary to admiral of fleet</td>
<td>1 7 4</td>
</tr>
<tr>
<td>Secretary to admiral commander-in-chief</td>
<td>1 1 1</td>
</tr>
<tr>
<td>Secretary to vice or rear admiral commander-in-chief</td>
<td>0 1 6 5</td>
</tr>
<tr>
<td>Secretary to a junior flag-officer or commodore</td>
<td>0 8 2</td>
</tr>
</tbody>
</table>

*Admiral's domestics*
### NAVY

**Royal Marines.** [MARINE]

<table>
<thead>
<tr>
<th>Ranks and Grades</th>
<th>Pay per Month</th>
<th>Pay per Quarter</th>
<th>Pay per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captain</td>
<td>£ 8 10 0</td>
<td>£ 32 4 0</td>
<td>£ 388 8 0</td>
</tr>
<tr>
<td>Commander</td>
<td>£ 7 0 0</td>
<td>£ 28 0 0</td>
<td>£ 336 0 0</td>
</tr>
<tr>
<td>First Lieutenant</td>
<td>£ 5 10 0</td>
<td>£ 20 10 0</td>
<td>£ 240 10 0</td>
</tr>
</tbody>
</table>

**Naval Instructors and Schoolmasters.**

<table>
<thead>
<tr>
<th>Ranks and Grades</th>
<th>Pay per Month</th>
<th>Pay per Quarter</th>
<th>Pay per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captain</td>
<td>£ 8 10 0</td>
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<tr>
<td>Commander</td>
<td>£ 7 0 0</td>
<td>£ 28 0 0</td>
<td>£ 336 0 0</td>
</tr>
<tr>
<td>First Lieutenant</td>
<td>£ 5 10 0</td>
<td>£ 20 10 0</td>
<td>£ 240 10 0</td>
</tr>
</tbody>
</table>

**Net Sea Pay of the Royal Navy.**

<table>
<thead>
<tr>
<th>Ranks and Grades</th>
<th>Pay per Month</th>
<th>Pay per Quarter</th>
<th>Pay per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captain</td>
<td>£ 8 10 0</td>
<td>£ 32 4 0</td>
<td>£ 388 8 0</td>
</tr>
<tr>
<td>Commander</td>
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</tr>
<tr>
<td>First Lieutenant</td>
<td>£ 5 10 0</td>
<td>£ 20 10 0</td>
<td>£ 240 10 0</td>
</tr>
</tbody>
</table>

There are 19 naval instructors and schoolmasters appointed under regulations issued May 1st, 1837, who receive £6. 1s. per lunar month, and 30l. per annum bounty, and 3l. a-year from each young gentleman who shall receive instruction from him. An additional rating of first-class petty-officers is also allowed, called 'scamen's schoolmaster.'

There are a retired rear-admirals and 3 retired captains who receive 6l. under order in council of 30th June, and 15l. under order in council Novem. There are 7 naval Knights of Windsor, 9 masters, 11 physicians, 10 retired surgeons, and 12 chaplains, and in the above table, there are 138 surgeons and 27 masters unfit for active service; of the lieutenants, probably not more than 1000 are fit for active service.
Every petty officer, seaman, marine, and boy, shall receive for wounds from 6d. to 2s. a day; and every able seaman for twenty-one years' servitude, reckoning from the age of twenty, from 16d. to 1s. 2d. a day; if discharged from infirmity after fourteen years' service, from 3d. to 9d. a day; and under fourteen years' service, if discharged from disability contracted in the service, from 3d. to 6d. a day, or a gratuity in lieu of, if 1l. to 1s. 6d. If a man becomes totally blind, he shall have 3d. a day added to any of the above. Ordinary seamen receive three-fourths, landmen two-thirds, boys half the able seaman's pension. Marines, as able seamen.

The following petty and non-commissioned officers shall receive, in addition to the above, the following allowances:

**Superior Petty.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Service</th>
<th>£</th>
<th>s. d.</th>
<th>£</th>
<th>s. d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>5 weeks</td>
<td>5</td>
<td>7</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>4 weeks</td>
<td>4</td>
<td>1</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>16</td>
<td>3 weeks</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>2 weeks</td>
<td>2</td>
<td>5</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>15</td>
<td>2 weeks</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>

**Inferior Petty.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Service</th>
<th>£</th>
<th>s. d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>4 weeks</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>3 weeks</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>16</td>
<td>2 weeks</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Persons discharged with disgrace, or by sentence of a court-martial, are not entitled to a pension. On a ship being paid-off, the captain may recommend any petty-officer or seaman, non-commissioned officer or marine, for the medal and gratuity for invaluable good conduct; 1l. for first-class petty-officers and serjeants, if they have served as such ten years, 7l. to second-class petty-officers and serjeants who have served as such seven years, and 5l. to able seamen and marines.
Fifth class. Gunner's crew, seamen-gunners, carpenters, sailmakers, and cooper's crews, able and ordinary seamen, yeomen of store-room, stokers, privates and fifers of marines of seven years' service, one share each.

Sixth class. All other ratings, boys of the first class, and marines under seven years' service, two-thirds of a share each.

Seventh class. Volunteers of 2nd class and boys of 2nd class, one-third of a share each.

When captains and commanders share together, the captain to have double the commander. Lieutenants in command share as captains when not in company with a captain or commander. Clerks in charge, as pursers if a pure per cent.

When any of her Majesty's ships carries bullion or jewels on board, the captain or commander is allowed a per cent, regulated by the queen in council, as compensation for the risk and charge, one-fourth of which is given to the Flag-officer of the Hospital, one-fourth part to the Command-in-chief if he shares the responsibility, and the other half to the captain.

Officers settling in the Australian colonies are allowed a remission of the purchase-money, in amount from 110l. to 300l., according to their rank and service.

(Reference has been made to Derrick's "Memorials of the Rise and Progress of the Royal Navy; James's "New Life History; Sir W. Raleigh's "Essay on the Invention of Ship"; Sharon Turner's "Hist. Anglo-Saxons; Barrow's "Life of a Norfolk Man"; and various others.

NA'XIJA. [MAIDAV. vol. iv. p. 298.] Dr. Leach appears to have been the first who established the genus.

NAXOS, NAXIJA, one of the larger Cyclades, between 36° 42' and 36° 15' N. lat. and 25° 18' and 25° 1' E. long., lies east of Paros, from which it is separated by a channel two miles wide. It is situated in the middle of the Archipelago, about half way between the coast of Greece and that of Asia Minor. It was antiently called Strongyle (round) from the round outline of the island, the island of Deia, the shape, and also from the island of Dionysia, from the worship of Dionysus, who, according to the myth, was brought up on this island. Its first inhabitants were said to have been Thracians. The name of Naxos has been stated by some to have been derived (Stephanus of Byzantium) from the word Naios, the name of a river or other colony which settled on the island. According to Herodotus the Greek inhabitants of Naxos were Ionians from Athens (viii. 46). The island was taken by the Athenians in the time of Pisistratus. The Persians made a fruitless attempt to take the island, under the conduct of Artagora; but afterwards it was captured and ravaged by them under Datis and Artaphernes (B.C. 490). After the defeat of Xerxes at Salamis (B.C. 480), the Naxians threw off the Persian yoke and recovered their independence. After the battle of Salamis, Naxos became one of the allies or confederates, at the head of which was Athens; and it was the first of those states that fell under political subjection to Athens. In modern times, Naxos, after the conquest of Constantinople by the Latins, became the seat of a ducal government, and was the chief of the Venetian colonists or other colonies. [ARCHIPELAGO, GREEKIAN] It was taken possession of by the Turks in the sixteenth century, and now forms part of the new kingdom of Greece.

Naxos is the most fertile of the Cyclades, and its wine is much esteemed; it produces also linen, cotton, silk, and kinds of fruit, and abounds with game. The plains and valleys are well supplied with springs, and all travellers describe Naxos as a very pleasant country. The chief town of the island, the capital of the duchy, and also the chief port, is called Naxos. It is situated near it is the harbour, called Porto Salino, on account of the sea-salt which is collected there. The castle of NAXO on the hill above the town, was built by the Venetians, and was the residence of the dukes. According to Tiberius, the place of the Turks, the Turks and the beards of the goats which fed on the plant, in the manner mentioned by Herodotus (iii. 112). There are about forty villages and many country-houses scattered about the island, the population of which is reckoned at 10,000 souls. There is a Greek and a Latin bishop, with convents of both churches. The northern part of the island contains some mountains, from which came a kind of marble called by the Greeks, on account of its being spotted like a serpent's skin, and which was much valued among the Greeks also found there, which is considered of the best kind,
The shores of Lough Neagh are low and flat, and in some parts marshy and liable to be frequently flooded; they are altogether deficient in picturesque beauty. The water of the lake possesses in several parts a petrifying quality, which it is supposed to derive from the adjacent shore. The petrified wood is often discovered in a retired spot, and the pebbles found in the white sand of the shores, chiefly chalcedony, are polished and employed for seals and necklaces. The char, the pullan, or fresh-water herring, the dollaghen (a species of trout), and other fish, are taken in it, as is the heron, the bittern, the teal, and the widgeon frequent the shores.

Lough Neagh is navigated by small vessels, and communicates by one canal with Lisburn, Belfast, and by another with Newry. A steam-boat is employed on it in towing vessels across.

NEAL, DANIEL, an English dissenting divine and writer of considerable eminence, was born in London on the 14th of December, 1678. His early education was received at Merchant Taylors' school. In 1697 he entered the academy of the Rev. Thomas Robinson after having continued there about three years, went to prosecute his studies at Utrecht and Leyden. On returning to England he became assistant to Dr. Singleton, the pastor of an independent congregation in Arundel-street in London. In 1699 he was chosen their minister. Notwithstanding his official duties, in discharging which he was eminently faithful, he found leisure for literary labours. In 1729 he published a 'History of New England,' and subsequently published the 'History of the Puritans,' which is written with great minuteness and accuracy. He was the author of a 'History of the Antiquities of Ireland,' published in 3 vols. 8vo., the first of which appeared in 1732, and the second, third, and fourth in 1733, 1736, and 1738 respectively. It has since passed through many editions. The first volume was reviewed by Dr. Maiold, bishop of St. Asaph, and the remaining volumes by Dr. Zachary Grey. To the former Neal himself replied; and an answer was published to the latter by Dr. Toulmin, in an edition of Neal's History, published in 1797. Neal died in Bath, in April, 1743, highly esteemed as an author and a divine. (Neal's Life, by Toulmin.)

NEANDER, CHRISTOPHER FREDERIC, deservingly esteemed as the author of one of the best examples of devotional poetry in the German language, was equally estimable as a man. He was born at Eka in Courland, December 26, 1724, and lost his father when about eight years old, but was permitted to possess the advantages of a good education, not only as a tender guardian, but as a model for the virtues by which he afterwards distinguished himself. Having completed his studies at the university of Halle, he first became tutor in a private family, and in 1750 was appointed pastor of a small congregation in the outskirts of the city, to whom and to the duties of his office he became so attached, that when a professorship at Halle was professedly offered him, he refused to accept it, preferring to remain in obscurity, where he felt that he could be eminently useful. If he afterwards consented to quit his former living for the more lucrative one of Steinach, it was with no other interested motive than that of being thereby enabled to support a widowed sister and her five children. By this change too the sphere of his usefulness was greatly enlarged for he became a preacher. In 1775 he was made dean of the diocese of Driben; and in 1784 superintendent of church matters in the duchies of Courland and Semgallen; but he still continued to reside among his congregation at Steinach. He was a man of private character, and a writer. In the latter character his fame rests chiefly upon his 'Geistliche Lieder,' a collection of devotional songs, which may justly be regarded as models of the kind, and apparently cast in the most admirably suitable species of composition. At once animated, simple, dignified, and breathing heartfelt piety, they are equally free from affected sublimity and bombast on the one hand, and from puerility or unbecoming familiarity on the other. They are the genuine effusions of devotional feeling regulated by cultivated taste.

NEAP or NEEP TIDES. [TIDES]

NEAP'POLIS. [NAPLES.]

NEARCUUS, the son of Androtimus, was a Cretan by birth, but an inhabitant of Amphipolis on the Strymon.
He accompanied Alexander in his invasion of Asia, and was appointed by him to conduct to the Persian Gulf the fleet which had been built on the Hydaspes. The narrative of this voyage, the earliest of which any account is given, was written by Nearchus himself; and though the original journal was destroyed, Arrian has preserved a great part of it, and furnished other materials, to give a "history" of everything of importance which it contained. Strabo and Pliny have also preserved some account of this voyage, but their narratives are full of mistakes and inconsistencies, and cannot be compared with the full and accurate account of Arrian.

Doddow and some other modern critics have considered the journal of Nearchus, as preserved by Arrian, to be spurious; but its authenticity has been fully established by Gosselin (Geographie des Grecs, p. 22), Sainte Croix (Examen Cyclades, Th. 250), and especially by Vincent (Commerce and Navigation of the Antients in the Indian Ocean, vol. i, p. 68-77).

The course of the fleet from the Hydaspes to the mouth of the Indus is described under Alexander (p. 369, 361), who explored in person the mouths of the Indus, and sailed into the great Indian Ocean.

The fleet under Nearchus took its departure from a station south of Pattala, about nine miles from the mouth of the Indus, on the 25th of April (n.c. 325). After getting clear of the mouth of the Indus, the first place which they reached in the Indian Ocean was Krokola, which Arrian describes as a sandy island. This place appears to correspond to the modern Kurachee, or Crotchy Bay, in which there is a small sandy island, called Churna or Chilney. This harbour Nearchus called by the name of Alexander, and here he determined to remain till the season should be more favourable for his progress. It has been already remarked that he left the mouths of the Indus at the beginning of October; and as the north-east monsoon does not commence till November, and only becomes settled in December, a delay of some time was almost unavoidable. Having remained at this place for ten days, he continued his voyage, though the monsoon had not yet completely changed; which he thought would be very slowly for some days. The fleet anchored successively at Domar, Saranga, Sakala, and Morontobara, or Moronutobara, the position of which places cannot be determined, and where, being at the mouth of the river Arabis (Churna, or Chilney), which separates the country of the Arabi from that of the Oronte. From the Arabi they proceeded twelve miles and a half to Pagala, and from Pagala nineteen miles to Kabana, an open and desert shore; between Pagala and Kabana they lost two galleys and a transport. From Kabana they proceeded twelve miles to Kokala, where Nearchus disembarked his men and formed a camp on the shore. Ihere Leonatus, who had been left in the country of the Oronte by Alexander with a particular charge to attend to the preservation of the fleet, joined them, and supplied them with provisions.

After remaining some days at Kokala, they proceeded thirty-one miles to the river Tomenus. This was the longest distance they had sailed yet in a day; and their progress increased; there being less chance of the monsoon becoming more fixed about this time. They remained six days at the Tomenus, where they found barbarians, shaggy on the body as well as on the head, and with nails sharp and long like the paws of wild beasts. There they proceeded onwards to Malana, where, about the middle of the month of July, they fixed the boundary of the Oronte and the commencement of Gadirasia. The whole of the coast from Malana to Cape Jack, a distance of 400 miles in a right line, was inhabited by the ichthyophagi (fish-eaters), who lived almost entirely on the fish of the sea. The fleet was driven again into loaves or cakes; and even the few cattle which they had fed upon dried fish. Arrian's description of the coast and the people is confirmed by modern travellers, one of whom, quoted by Vincent, informs us that "they have few ports, little corn or cattle; their country is a low plain and desert; their chief support is fish, of which they take some of a prodigious size: these they salt, partly for their use, and partly for exportation; they eat their fish dry, and give dried fish likewise to their horses and cattle."

By the want of fresh water, the officers of the fleet determined to sail thirty-seven miles to Bagisa; and on the following day they sailed round a rock or promontory, which extended a considerable way into the sea (probably Cape Araborah), and proceeded successively to Kila and Kalamana (Kila); where they found the sea turned green. From Kila to Kalamana was an island called Karime, which appears to be the same as the modern Ashtola, or Sungadeep Island. From Kalamana they proceeded twelve miles to Kuras; and thence, after doubling a high rocky promontory, they projected themselves into the sea, and where probably the modern Cape Passennoe, they reached a safe harbour, called Mosarna, which must be looked for a little to the west of this cape.

At Mosarna Nearchus found a pilot, who undertook to guide Alexander in the Persian Gulf, and that they sailed on each day a much greater distance. From Mosarna they proceeded in succession to Balomus, Barna, Dendrobos, (perhaps the Dendrobula of Ptolemy), and Kophas, the position of which places is uncertain, with the Cleonic, or Cleonicus, and the modern Koppah. From Kophas the fleet sailed round Cape Gwadel, and proceeded fifty miles to Kyiza, where they did not land, as the coast was rocky and barren. (On the following day they surprised a small town, probably the present town of Khuzistan, and called by them the Karama.) Here they were greatly in want of victuals. They afterwards anchored at a cape in the neighbourhood called Bages; and thence proceeded about eighty-seven miles in two days to Kanesia, a town in ruins, probably situated on Chabur Bay; from Kanesia Nearchus sailed twenty-five days, by the intermination to a desert coast, where he was obliged to anchor at some distance from the shore, as the distress of the people was now risen to such a height, that if he had suffered them to land, he had reason to suspect that they would have continued in the same condition. They, therefore, proceeded, in great want of provisions, to Kanate (Tambuk), Trii, and Dagusira, and at length reached Badas, a place on the western side of Cape Jask, which separated the country of the Ichthyophagi and Karamana. At Badas they found corn, vines, and fruit-trees; they excepted the olive, a town inhabited, and the inhabitants ready to relieve their wants.

From Badas they proceeded fifty miles, and came at anchor on an open coast, opposite Cape Maketa (Kas Maruka), to the south of which the Persian Gulf commenced. From Badas they proceeded forty-four miles, to Neotopana (near Karroon), in the Persian gulf. From Neotopana they sailed on the following day to the river Arambas (Ibrahim), at the mouth of which was the town called Hamilton. They continued in this sea for some time, still preserved in the celebrated island of Ormus, in the neighbourhood. Near this place Nearchus landed his men, and ordered the ships to be drawn on shore; and learning that Alexander, during a journey of five days, went with a few attendants to a camp, and was rescinded by the king with marks of the greatest honour and respect. At first Alexander would hardly believe that the fleet had arrived in the Persian gulf in safety; and when he was informed of the news, he is said to have reported it to his mother, by the Grecian Zeus and the Libyan Ammon, I swear to you that I am more happy in receiving this intelligence than at being the conqueror of all Asia; for I should have considered the loss of my fleet, and the failure of this expedition, an affair so momentous and so glorious as I have acquired. So anxious was Alexander to establish a commercial intercourse between India and the western provinces of his vast empire.

After remaining a few days with Alexander, Nearchus returned to the fleet, and sailed round the western coast of the following year (n.c. 325). During the winter they sailed three of the ships grounded during a storm on a shoal off the western coast of the island of Orazaeta (Kakana); but they got off when the storm ceased, and joined the fleet on the following day. They were again driven in danger by sailing to the south-westward, and anchored at the islands called at present the Great and Little Tomb. On the following morning they sailed again to the mainland, landing on their left the island Pukra (Pelorus), and after a
ail of two or three days arrived at Katans (Kuath, Guas, or Kana), a low desert island, opposite to which, according to Nearchus, is the boundary of Persia and Karmania on the sea.

From Katans they proceeded along the coast of Persia, authoring successively at Ilia, opposite the island of Kainthos (Inderbater); at Ouchas, under a high mountain; at Alor, which they found many ships at anchor; at a bay, probably the same as the modern Nabanid, on the borders of which were many villages with palm and other fruit-trees; and at Gogana (Congoon), situated at the mouth of a mountain-stream called Areon; and at the river Sisus, west of the modern Roe Khoro where Nearchus remained twenty-one days in order to repair and refit several of his ships, during which time he received a large supply of corn from Alexander. About the 1st of February they sailed from the Staeus to Hieratis (Khoare), a place well uhah, and thence to Mesambri, then anchored at the mouth of a river called Padargos. Arrian describes the whole of this country as a peninsula, which correctly most correctly with Aboushehr, generally called Bushire.

There they proceeded to Taok, near the mouth of the river Grains (Khitaiti), on which there was said to be a place of the Persian kings, about 200 stadia up the country. Strabo (xv., p 172. Casabu.) also mentions a Persian palace near the sea, called Oko, which apparently is a short form of Taoke. From Taok they proceeded in small ships, which would be too small to hold a large water torrent, and to the river Arosis, called Oroatis by Strabo, Pliny, and Poleney (Tub.), which, according to Arrian, divided Persis from Susana.

At the Arosis they took in a supply of water for five days, a necessity. Whether there was any water could be gained without considerable danger, in consequence of the number of shoals which extended from the land far out into the sea.

The whole of the navigation along the coast of Susana was attended with great difficulty and danger; but the fleet was now under the attention of a safe and secure ship, the river Pasitigris (Karoon), where Nearchus joined Alexander and his army, who were on their march from Perespolis to Susa. Vincent supposes that the expedition was concluded on the 24th of February, a.c. 325.

After the death of the Alcmaeonidae, we find that Nearchus was governor of Lycia and Pamphylia (Justin, xiii. 4), and that he attached himself to the fortunes of Antigonus, whom he accompanied in several of his expeditions. The time and manner of his death are unknown.

The complete and interesting examination of the voyage of Nearchus is given by Vincent in the first volume of The Commerce and Navigation of the Antients in the Indian Ocean, from which the preceding account has been chiefly drawn, compared with the maps of Beloochistan, and of ancient and modern Persia, published by the Society for the Diffusion of Useful Knowledge.

The Greek text of Arrian, with some useful notes and a map, is contained in Schleicher's edition. [Arrian].

NECANS. [GLASGOW AND MANSHIRE.]

NEBRUS. [NEBRUS.

NEBRUS, one of the family of the Asclepiads, and the most eminent physician of his day, lived in the island of Cos, about 580 years B.C. The Amphiectons, having consulted the oracle of Delphi, in consequence of the plague breaking out among their army while besieging the town of Cissa in Phocis, were directed to seek for Cissa the young of a stag, together with gold. This was interpreted to mean Nebrus* and his son Chrysus, who accordingly joined the camp of the Amphiectons, where the former held a high command. Of the latter was the first person who mounted the wall at the time of the general assault. (Thuc. I. 48; and Fuscus, Phoc, 37, who attributes the victory to Nebrus.)

NEBUFLE. [STARS AND NEBUFLE.]

NECESSITY. In metaphysics, according to the common definition, is that quality of a thing by which it cannot be, or whereby it cannot be otherwise. When, in a proposi-
tion which affirms any thing to be true, there is a fixed in-
variable connection between the subject and the predicate, then that thing is understood to be necessary. Necessity is opposed to chance, accident, contingency, and to what-
ever involves the idea of uncertainty and of possible vari-

* ἐνέφιτος in Greek, signifies 'a sawn,' and ἐνεπίνυς, 'gold.'
director of the treasury, in 1776. This was a new office, and was created for the purpose of giving assistance to that of comptroller-general, which was filled by the counsellor of state Taboureau de Réaux, a mild and unassuming man, who, feeling his inferiority to Necker, resigned his place in the following year. Necker was appointed director-general of finances, in June, 1777, but without a seat in the council. That was a critical period; the finances had been long in a state of great embarrassment, and the impending war with England on account of the American colonies required a great increase of expenditure. Necker, being adverse to imposing new taxes, endeavoured to evade the deficiency by economy. In 1778, he published 'Compte Rendu,' which disclosed for the first time the state of the revenue and expenditure of France, and made him numerous enemies. In order to counteract their intrigues, Necker asked for a seat in the council of the King's confidence, but this being refused on the score of his religion, he tendered his resignation, which was accepted, in May, 1781. He withdrew to Switzerland, where he purchased an estate at Copet, on the banks of the Leman Lake, in the hope to retire from public life, and there founded a school for the education of the French clergy. Necker was dissatisfied, but only in money matters, for he was tormented by the ambition of fame and popularity. Turgot had laid his faith in his principles; Necker confided in himself. Turgot had fixed ideas on legislation, and had established a parallel government in France, combating only partial abuses, and appeared to have no settled notions of the science of government. Turgot wished to give to the French a political and moral education; he wished to form public opinion; Necker believed that public opinion in France was enlightened and bowed himself before it. The former spoke to the people as a legislator, the other as a courrier of the people. In his retreat however, after his second resignation, he altered his own opinion, 'he says, in the preface to his work 'De l'Administration du M. Necker, par lui-même, 1791, appears to me no longer as it did once. The respect which I felt for it has been weakened since I have seen that opinion influenced by the arts of the wicked, since I have seen the deceptions and deceptions themselvesought to have rightly estimated and marked with its scorn and reproach.' Necker's first resignation however was much more to be regretted: it was a loss to France at a critical moment, and it was a great fault on his part, for he might have maintained himself in that by his unceasing self-love preserved him. He fancied that they could not do without him, and that he would be soon recalled, and thus become all-powerful. He was mistaken; and when at last he returned to office, the situation of the state was greatly changed, and circumstances had become such as to require talents really superior to his.' (Droz, Histoire du Règne du Louis XVI, b. 11, 1839.)

In 1787 Necker returned to Paris, where he wrote against Calonne, who had just been dismissed from his office of comptroller-general of the finances, and who was, in consequence, banished from the capital, but was soon after recalled. In the following year (August, 1789), on the resignation of Brienne and of that of the minister, Louis XVI. appointed Necker director-general of finances, as the only man capable of reforming the administration. The king had already promised the convocation of the states-general, and Necker urged him to keep his promise. But he failed as a statesman, in not arranging beforehand a plan for the convocation that was made possible, so as to prevent the collision that took place on their first meeting. Necker was a financier, but no general statesman; he was a philosopher and a man of letters, but not a jurist or a legislator, and he was thus considered by a man well qualified to judge of these matters. (Mirabeau.) Necker's second ministry was short. Unable to check or direct the rising popular storm, and not enjoying the confidence of the court, Necker, unwilling to become a watchword of the agitators, offered privately to Louis XVI. to quit his place and the kingdom, if a royal edict should impose upon him the public service. On the 11th of July, 1789, the king wrote him a confidential note, requesting him to set off quickly and privately. Necker obeyed, and set off for Switzerland that very night. But this step, instead of preventing, only precipitated the Revolution. After the taking of the Bastille, the National Assembly demanded the recall of Necker, and Louis complied. Necker was received in triumph, but his popularity was short-lived. He did not go far enough to please the movement-men. In December of the following year, 1799, he gave in his resignation to the National Assembly, which received it with cold indifference. He spent the remainder of his life in Switzerland, in retirement and study, and wrote several political tracts. He had written, several years before, a work, 'De l'importance des Opinions Religieuses.' He died in April, 1804. His daughter has become celebrated as Madame de Stael.

**NECROSIS** (from nec, 'dead') is the term applied particularly to mortification or death of bone. Its general and medical council as a rule are the same as those of mortification generally. (MORTIFICATION; INFARLAMEN; BONE.)

**NECTARINE.** (Prach.)

**NECTARINIADE.** (Sun-Birds.)

**NECTOPODA** (Necklace-Necklace.)

**NECTURUS** M. Rafinesque's name for a genus of *Dretempla*, placed by Cuvier between the *Arctola* and the *Proteis* of Laurenti. This form is the *Men brachus* of Harian and the *Phanerobranchus* of Poletier.

Generic Character.—Four toes on each foot. A row of teeth on their intermaxillaries, and another, parallel but more extended, on their maxillaries.

**Necturus lateralis** (Triton lateralis of Say; *Menobranchus* lateralis of Cuvier; *Phanerobranchus* lateralis of Fittinger) is the species best known, and will serve for an example of the genus. It is olive, with blackish spots above, and a blackish stripe running from the muzzle just above the eye and reaching to the branchial, where it becomes continuous with the blackish belly, which is variegated with olive spots. The size is considerable; some say as much as two or three feet in length.

**Geographical Distribution.**—The great North American lakes.

**Necturus lateralis**

**Necked, or Nejed.** (Arabia.)

**Needle Manuctustry.** This branch of industry is supposed to have originated in Spain, from the circumstance of the name Spanish needles being originally used in England, although the art was brought here from Germany. Needles were first made in England about the year 1563, by Elizer Crosse and his partner, in London. This manufacture can never become one of much importance to a nation, and it is not therefore surprising that we are without any historical details of its progress. The reputation long enjoyed by Whitechapel needles point out the particular locality in London where the manufacture was carried on. At this time, the largest number of needles are made at Hathersage in Derbyshire, in Warwickshire, in and near Birmingham, and also at Protectorate in Cumberland.

The manufacturing processes are as follows:—Soft steel wire of the required thickness is first cut into lengths of about five inches, and these lengths, being placed together in a bundle, are bound together by means of iron rings, and then the iron ring is divided into inches in diameter, and tied with each end of the bundle. This bundle is then placed on the needle-iron, and rolled to and fro upon it, under the pressure of a flat bar of iron, by which means the wires are made perfectly straight. About a dozen and a half or two dozens of these wires are then taken by the grinders, and the needles are ground to a dry grindstone. This process lines the wires in a more or less exact form for their proper accomplishment, as each wire must be so held by the grinder as to revolve in contact with the grindstone. It is this dry-grinding which makes the trade of a needle so injurious to health, through the inhaling of the small particles of steel which are thrown off during the operation. A preservative against this evil has been pro-
marked with minute precision, and finished with an exquis-
tite touch and a light pencil. His bright clear pictures, in
which he avoided the brown tinge sometimes obser-
vable in the works of his master Steenwyck, are the
most esteemed. Being an indifferent designer of figures,
he often got F. Franckes, Van Thulden, Vélét Breughel,
or Teniers, to paint the figures; those of the two last greatly
counterbalance the pictures of Neeer.
He died in 1651, at the age of eighty-one. His son,
Peter Martin (called 'the Young') painted in the same
circle, and chose the same subjects as his father, but was by
no means equal to him.

NEER, ARNOLD VANDER, born at Amsterdam in
1619, is well known to connoisseurs and artists both by the
peculiarity of his style and by the handling and transparence
of his landscapes. His subjects are chiefly views of villages
with fishermen's huts on the low banks of rivers and canals.

NEER, EGLON HENDRICK VANDER, son of the
painting, was born at the age of eighty-one. His son
first under his father, and afterwards under Jacob Vanloo.
He was well versed in all the branches of the art. In his
composition is skilful and his drawing correct; his
portraits, both large and small, are spirited and well
drawn. He particularly excelled in landscapes.
He lived first at Paris, then at Oranço, and
lastly at the court of the elector palatine at Dusseldorf,
where he died in 1703.

NE EXEBAT REGNO, the name of a writ which issues
out of the Chancery on the application of a party complaint-
to prevent his debtor from leaving the realm. The writ is
directed to the sheriff of the county in which the debtor is;
and after reciting that it is represented to the king in his
Chancery on the part of the complainant, the said defendant
is ordered that the said defendant is mostly indebted
the said complainant, and designs quickly to go into parts
beyond the seas (as by oath made on that behalf appears),
which tends to the great prejudice and damage of the said
complainant, commands him to 'complain to the said debt-
or to throw out the writ, where the said defendant shall refuse
to give such bail or security, the sheriff is to
the court of Chancery for this writ, is nothing more than this:
whether the plaintiff has made out a case which is conform-
table to the terms of the writ, as interpreted by the decisions
of the court.
The writ cannot be applied for unless in a suit, that is,
unless a bill is already filed; but a plaintiff may apply for
it in any stage of a suit, whether the writ is prayed for by
the bill or not. The plaintiff cannot have the writ if he is out
of the jurisdiction. There must be a debt in equity
actually due at the time the writ is applied for; and
the writ will not be granted for a demand on which a party
can be held to bail at law. The application for the writ
must be accompanied with an affidavit sworn to the
debt, except where the bill is for an account, in
which case it is sufficient if the plaintiff swear that he
believes there is a balance in his favour; or except where
there is other decisive evidence of the debt, it may
be proved from the accounts of the parties, or
from admissions in the answer. The affidavit must also
show that the defendant is going abroad, or it must show
facts which prove that conclusion, and that the debt will
be in danger if the plaintiff is restrained. The writ
may also issue out of the realm, and it issues until answer and further order.
A defendant may apply to discharge the writ on putting
in his answer.

It is unnecessary to enter into further particulars here.
The writ is founded on the real or supposed prerogative of
the king to restrain his subjects from departing from
the realm. The 'Natura Brevium' contains two forms of
VOl. XVI.—8
was written for popular use. The European promoters of algebra, with the exception only of Vieta, adopted the use of two species of quantities, positive and negative, with the explanation above noticed. Vieta not only avoided the negative quantity, but, as far as he could, dispensed with the restrictive sign; and thus in his algebra the double nature of quantities in the words 'Plus autem vel minus non constituit genera diversa.' It is not our intention to follow the earlier algebraists through their different uses of negative quantities. These creations of algebra retained their existence, in the face of the obvious deficiency of rational explanation which characterized every attempt at their theory. Newton and Euler distinctly admit the existence of the quantity less than nothing; the latter asserts that a man who has no property is in no way different from another who has made him richer by a gift of 50 crowns, and therefore begins with 50 crowns less than nothing. Elementary treatises for the most part try to append an explanation of negative quantities to an algebra which is nothing more than arithmetical, instead of introducing those new abstractions which are the basis of the separate science; so that algebra, instead of being systematically learnt, is collected by slow and often dubious steps from arithmetical examples, in which the rules of operation of the former science are applied, perhaps by the pupils themselves, who acquire a real perception of the meaning of the subject, except those who study mathematics to great extent. It is matter of notoriety that difficulties attend the beginner in algebra of a nature totally different from those which are found in arithmetic; and, in fact, the difficulty which is commonly supposed to stem from the square roots of negative quantities, usually called imaginaries, might be avoided by writing an intelligent commentary on what he knows, another who has mastered a common elementary treatise on algebra is conscious only of a great increase of working power, with a glistening of ideas....

The first abstraction which meets us in arithmetic follows the same line as the other abstractions, and the art of algebra which was cultivated by the Italians of the sixteenth century.

In the oldest treatises on algebra which exist there is mention of a modification of quantity unknown in arithmetic, called negative quantity, as distinguished from positive. In the Via Gancia we find this distinction and rules for its use precisely as in modern treatises: one of the commentators says that negative is contrary; and the 'Lilimewi' contains the geometrical interpretation of a negative line, namely, a line measured in the direction contrary to that of a positive line. The commenator then observes that Patama's yojanas east, and Allahabad eight yojanas west, of a place called Varanasi; 'the interval or difference is twenty-three yojanas, and is not obtained but by addition of the numbers. Therefore, if the difference between two contrary quantities is to be obtained, there must be taken. Surely it will be said that algebra began in a strange confusion of ideas; but yet the fault is rather in expression than in conception. An art was in existence presenting undoubted means of discovering truth, commencing with a generalization of which the algebraists were ignorant, but not the arithmeticians. In Diophantus we find the common rule announced as a definition (without even a previous notice of the distinction of quantities) in terms as broad as the following: 'αλφον τον Αλφον παραγειασας ποιητι εφες,' &c.; literally, 'Defect upon defect remains the same,' but not the principle. The rules are announced in the same way, though the separate existence of positive and negative quantities does not seem to be assumed; it must be remembered that this work...
examining the four fundamental operations, we see no difficulty in either addition, multiplication, or division. As soon as we have mastered the subject of fractions, and have duly admitted the introduction of a part of a repetition [Figure], we see: let a and b be any two numbers or fractions, and a·b, a/b, and a+b must be real numbers or fractions, assignable by demonstrated operations as soon as a and b are assigned. But there is still a restriction upon the possibility of subtraction; a−b has no imaginable existence unless a is greater than b, when a−b, the magnitude of a−b vanishes entirely, and when a is less than b, the direction to perform a−b is just the same as asking for a part which shall be greater than the whole, it is a point that confuses ourselves to particular arithmetic, in which all numbers but a few have been reduced to a single set of values; it would most likely be thought of no use to carry the subject further, and in one point of view correctly; that is, it would be of little moment to deduce methods by which an individual so careless as to write down and operate upon such a symbol as a−a might be enabled to arrive at a subsequent correction of the mistake which a glance at the symbol should show him he has made. But when we use general symbols of number, we are liable to mistakes of this kind, dependent upon our inability to invent the order of terms of which the less should be subtracted from the greater.

First, we may mistake the nature of the quantity which results: thus if it be part of the conditions of a problem that p−q is required, the application of the conditions requires that I should state how much I gain or lose the answer should be either a loss of £(a−b) or a gain of £(b−a), according as a or b is the greater. We have then the choice between adopting one of these with the chance of possibly working the problem in the wrong distinct ways. And if it should happen that the conditions of the problem present this alternative in six distinct instances (and sometimes it happens oftener), there would be no less than 64 cases of solution, all, arithmetically speaking, essentially the same. But the mode of obtaining the answer, whether the answers obtained be the same or different.

Secondly, we may make an error of the same kind in the details of operation. For instance, suppose we have a + b; one which is convenient to exhibit in the form of a altered by one single addition or subtraction. Let us call them, for distinction, errors of interpretation and errors of operation, and let us show first that an error of interpretation will produce the error of operation and no other. If, in the first problem, we suppose a−b to be lost where b−a is really gained, and if the problem, after the result of the subtraction is annexed to a loss x, we shall suppose there is altogether a loss of x−(a−b), whereas it should be a loss of only x−(b−a). Secondly, the error of operation will produce the error of interpretation, whenever any interpretation is made; for when we look at x−(a−b) as a loss, we shall evidently suppose it to be more of a loss than x, or that a−b is lost besides; whereas, had we looked at x−(b−a), we should have inferred that there is a less loss than x, or if x were a loss we should have gained. Now the first step of the young algebraist, before he attempts any transition from universal arithmétique to algebra, must be to examine by many instances the effect of both classes of errors upon the subsequent proceedings and results. We shall here only state that the kind which he will finally arrive, with an example of each. The beginner cannot, as the proficient may do, see a sufficient reason for these results in the common rules of algebraical operation; and we should doubt that anything but a large number of examples would serve to give him the necessary insight into the conclusions.

1. The mistake of operation, how often sooner repeated, and how complicated sooner the deductions which may be drawn from it, produces no result in any way different from that of the correct process; that is, its result can be reduced to the same as the correct process by the use of no more than those rules which apply in the rational process.

Thus if x+a−b, wrongly taken to be x−(a−b), b being greater than a, be multiplied by x+p−q, wrongly taken as x+(p−q), q being greater than p, we find as the (supposed) product

\[x^2+(a-b+p-q)x+(x-a-b)\]

to which the application of the common rules gives

\[x^2-ax-bx+px-ax-ap-bp+aq+bp\]

precisely the same as the product of \(x+a-b\) and \(x+p-q\). The reason of this is as follows. In all the rational cases of the four operations, a term in the construction of which two signs are used has + before it, if those two signs be alike, and — if they be unlike, as in

\[a+b-(c-d)\]

or \[a+b-(c+d)\] or \((a+b)-(c+d)\]

If then a term were subjected to the signs + +, it would make no difference if the same term were subjected to the signs — — for the nature of the use of +. If then we take \(x+a-b\) wrongly as \(x-(b-a)\), we see that when we come to add this, say to c, we have

\[c+x-(b-a)\]

in which a, before it is disengaged, must come under the signs — — or, if the phrase be less objectionable, under the application of the rules to those signs, successively. But the correct process would give

\[c+(x+b-a)\]

in which a falls under the application of the rules to + +; and such application to + + gives the same result as that of — — necessarily and demonstrably, though in one of the two applications of the rule there is a minus of the opposite sign. In the same way the other cases may be proved, whence it follows that however many of these simple operations may be performed, no result can arise except either that of the correct operation or one which may be brought to it by the operations on signs, already described.

We must here pause to remind the reader that errors, however palpable and admitted, are not necessarily productive of error. True reasoning, on true principles, must lead to truth; but as true reasoning is not always true, and for truth falsehood, we have no longer any right to say must, but only most probably will. If then we can show of a particular class of errors that, used in a certain way, the results agree with those of true reasoning on true principles, we may demand the use of those errors as an equivalent means of finding truth. The mind of man would never stop at such a point; but for all that, we have the conclusion, as a logical consequence of the rules of arithmetic, that the mistake of the impossible subtraction introduced in operations, and not having previously vitiating the interpretation by which the fundamental objects of operation (equations) were deduced from the conditions of the problem, will produce no falsehood in the result.

2. Let us now examine the consequences of the error of interpretation. The effect of this is, that we write \(a-b\) instead of \(b-a\), but at the same time we suppose the multiplicity of which we are thinking to be of a diametrically opposite character to that which it ought to have. But also at the same time we add this symbol where we should subtract it, and vice versa; so that where we should take \(a-b\), and add, giving \(c+(a-b)\), we make one mistake in taking \(b-a\) and another in subtracting, giving \(c-(b-a)\). When mere rules come to be applied, we find the same result from both, namely, \(c+a-b\) and \(c-b+a\). We might then so manage as to exclude the actual presentation of the negative quantity, as in the following problem:—Two persons are now aged 30 and 40; at what date was (was, or will be, as the case may be) the first twice as old as the second? Let us suppose that we reach the date by going a years forward and afterwards b years back from the point to which we came; and if a supposition which is perfectly competent to yield any result, before or after the present epoch, by properly assuming a and b. But we must now choose a supposition; let it be that the ratio in question exists at some future time, that is, is greater than b. In a–b years then the thing happens; consequently,

\[50+(a-b) = 2 \times (40+(a-b)) \ldots (1)\]

\[50+(a-b) - 80 + 2a - 2b \ldots (2)\]

\[80 + 2a - 2b = 50 + a - b = 0 \]

\[30 + a - b = 0 \]

Or any number of years forward and 30 more years back is all the answer the conditions of the problem will give, or the event took place 30 years ago. But the correctness of this reasoning is only a semblance, for the result contradicts the supposition on which it was obtained, namely, that a
greater than $b$. To increase $50$ by the excess of $a$ over $30$ more than $a$ is beyond the power of the arithmetician. If then it be taken that $a$ is less than $b$, or that the event happened $b-a$ years ago, we have

$$50-50+a=20-(a-b)$$

(3)

and (4) is the same as (2); so that we arrive at the same result as before, and find our conclusion to justify the supposition on which it was made. The steps (1) and (3) differ to the same effect as if an error of operation had been made on (4) or (2) in retracing the steps.

In the preceding, by the use of two symbols, $a$ and $b$, we have enabled ourselves to obtain a correct and intelligible answer, even by the incorrect procedure, were we end with the determination of $b-a=(30)$, even where we reasoned on $a-b$. If however we had represented our unknown quantity by a single symbol, $x$, our first process would have stood as follows:

$$50+x=2(40+x)=80+2x$$

$x=50-30$

And the answer is obviously impossible. Our second process is,

$$50-x=2(40-x)=80-2x$$

$x=80-50=30$

From such instances as the preceding it may be collected that an error of interpretation, which causes us to write $a-b$ instead of $b-a$, will, in finding the value of $a-b$, cause an impossible subtraction to appear; and vice versa, that the apparent impossibility of subtraction in the result can arise from nothing but a primitive error of interpretation in fixing the nature of that result. This point must be well ascertained by every beginner from repeated instances.

Such a result as $3-8$ may be written $3-3-5$, or $0-5$; so that the error of attempting to subtract 8 from 3 is reducible to that of attempting to subtract 5 from nothing. At our present point we can say that the occurrence of 0 in subtraction is always due to the result which we suppose ourselves to obtain was diametrically wrong in quality in our previous supposition: thus in the preceding problem we found 50-80, or 0-30, and the real answer is 30 in its magnitude, but instead of being, as we supposed, 30 years after the present time, it is 30 years before it.

Having arrived at this point, the earlier algebraists at once received such symbols as $0-5$ and $0-30$, which they wrote $-5$ and $-30$, into the list of algebraical objects of reasoning, calling them negative quantities, and treating them as diametrically opposite in kind, and which should for comparison be written $0+5$ and $0+30$. These they called positive quantities. And, because, in all possible subtractions the remainder is less than the minuend ($a-b$ is less than $a$) they called $0-5$ less than nothing. The introduction of symbols, in beginning algebraical works by an exhibition of these definitions without the least warning of the manner in which arithmetical terms had been extended, converted the whole science into a mystery.

If we extend the notion of quantity so as to give different names to those of diametrically opposite kinds, we may call one set of quantities direct, and the others inverse. Thus property and debt, distance north and distance south, time before and time after, ascent and descent, loss and gain, progression and retrogression, &c. are of different kinds; either of any one pair may be called direct, but the other is then inverse. And in circumstances which require the addition of the direct quantity, the subtraction of the inverse quantity required; that whatever an increase in $A$’s property will augment, a diminution of it will diminish; whatever distance on a line progression on that line will increase, retrogression will diminish. If then we have $a+b$ where we imagine both quantities were what we took them to be, and it should turn out that $b$ is of an inverted kind, we know that we should have had $a-b$. If we put $+b$ for the quantity we thought we were using, and $-b$ for its opposite, the ordinary rule of signs will be sufficient to make the conversions which the correction of the mistake requires. Thus if, attending only to the rule that like signs produce $+$ and unlike signs $-$, we treat

$a + (b) = a + b$ and $a + (b) = a - b$;

or, in this instance, the affixing of $+$ or $-$ to a quantity according as our initial supposition is correct or incorrect.

Leaves us with our result if we were correct, and makes the necessary alteration if we were incorrect. The application of $+$ or $-$ serves reasoning engines in all the cases of addition and subtraction. Observe also that if any one, disputes the propriety of making the signs $+$ and $-$ take a new meaning, should prefer, say, to denote direct quantity by the prefix of $+$, and inverse quantity by that of $-$, the rule he would arrive at by induction is that like signs produce $+$ for operation; and $-$ for interpretation, while unlike signs produce $-$ for operation and $+$ for interpretation; where by like signs he would find he must mean $+$ and $+$, or $+$ and $-$, and $-$ and $-$, and $-$, and all others unalike. His little engines could be, use $+$ as if it were $-$, and $-$ as if it were $+$, so that he would ultimately differ from the algebraist by the continual use of two new signs without any new uses or practical meanings.

In the operations of multiplication and division the rule of signs is thus shown: it is that two negative quantities multiplied together produce a positive quantity, which means that a mistake of direct for inverse, or vice versa, made in both the terms of a product, produces no mistake in the product, when the latter is formed by the usual rules. Thus, if $a$, which should be $-a$, has been taken to be $a$, and if $b$, which should be $-b$, has been taken to be $b$, the algebraical product

$$(w-re)(y-x) = wy-xr+ry-rx$$

at which we arrive in the mistaken process, is precisely the same as

$$(w-x)(y-x) = wy-xr+ry-rx$$

at which we should have arrived in the correct process.

The first step then from arithmetic to algebra is made by the following definitions:

Quantities are distinguished into positive and negative, which are to be considered as of diametrically opposite kinds; and common arithmetical quantities (abstract numbers without signs) are to be considered as positive. The rules of arithmetical algebra are to be applied to the extended symbols, and in all cases in which a guessed quantity is not to be found, the rule of signs already known in the former must be applied. The purely verbal question of the terms less than nothing, &c. will be considered under the word Nothing.

The preceding extensions give an extended meaning to all the terms of operation; thus addition is no longer the simple arithmetical process, but a compound operation, first reducing a multiplicity of signs to one alone, and then following the direction of that sign; and the same of subtraction. The formula $-(-a)$ is quite simple. It may be asked then how we are to trace our steps through any problem so as to form its equation out of symbols which seem to have various meanings; for it might appear as if the $+$ of algebra were either the $+$ or the $-$ of arithmetic. The former is very simple: since the extended algebra is more than arithmetic in its actual operations, however meaning of those operations may be extended, we may be sure that if we assign a particular case of a problem, and treat it entirely as in arithmetic, we are, though with one case only in view, performing upon limited symbols limited because we think at the time only of a limited meaning: same steps which we should have to follow if we could, by one set of the mind, grasp the symbols in their utmost generality.

Our limits will not allow us to pursue this subject to the extent which might be necessary for an unpractised user of symbols, and we therefore pass on to the yet higher view of the question, in which the introduction is made to a pure extended algebra. If we examine any algebraic identity (the sign of identity being $=$) for example, so simple as

$a + b = b + a$

we see of course that its truth is a consequence of the definition of $+$ and of the conceptions which are inseparable from our minds from the addition of quantity to quantity. This is a true identity of symbols, but the converse is not true; the meaning of the symbols does not follow from the truth of the identity. This is, let it be granted that $a + b = b + a$, and it does not follow that $+$ means addition, for consistently with the preceding it might mean multiplication or it might mean the formation of a rectangle by erecting a line equal to the second.
symbol upon a line equal to the first. In fact, the identity before us merely expresses that + is a symbol of an operation so connected with the subject of which the latter may be interchanged without any alteration of the result. And the same may be said of any other fundamental symbol of identity; it may preserve its truth under many different meanings.

When we perform operations of algebra with such mechanical expertise which practice teaches, we do not look back to the meaning of our operations at each step, but proceed upon a few rules of operation, of the meaning of which we must become conscious the moment we have to stop in contradic the mode of proceeding, dropping that consciousness as soon as we are again in the routine of operation. If we collect the symbols of algebra, we shall find them all in the following list. 1. The numerical symbols of arithmetic. 2. Letters denoting magnitudes. 3. The signs of operation, multiplied by the former, the latter with their usual abbreviations of \( \times b \) into \( ab \), and \( a/b \) into \( a \) b. 4. The exponent, as in \( a^b \), \( b \) being any algebraic magnitude. 5. The symbols of logarithms, signs, cosines, &c., which may be considered as abbreviations of other terms made up of and connected by the preceding symbols. The list of fundamental operations is not very large: such as

\[ (+ a) = a, \quad ab + ac = a (b + c), \quad ma = a, \quad mb = b \] &c.

so that it would be perfectly possible to imagine a person who had forgotten the meaning of the symbols able to perform the mere operations by reference to a few primary rules.

This being the case, suppose these few rules of reference collected together; we can then conceive a person operating by means of these rules, without thinking of their meaning. As it is of importance that a clear idea should be formed of this separation of symbolic from arithmetical reasoning, we shall propose the following illustration. A person who has thoroughly studied the algebra of positive and negative quantities, is attacked by a severe illness, on recovering from which he finds all the inter connecting conceptions and the symbols which represented them totally gone, while his expertise in performing the mere transformations with which algebra abounds remains undiminished. When he sees \( (a + b) \) he perfectly remembers that its substitute was \( a^2 + 2ab + b^2 \), but what \( a, b, +, \) &c. stood for, or might have been supposed to stand for, he has wholly forgotten.

He is now a purely symbolical algebraist. Suppose that he endeavours to recover the meaning of his symbols by close examination of their relations. Suppose, for example, that \( a + b \) had such a meaning as made it identical with \( b + a \), and he tries all meanings which will fulfil this condition, and attempts to give conformable meanings to other symbols, in the hope of picking out a set of definitions which are either in the direction of the relations which live in his memory shall be logical consequences. He succeeds in his attempt, and thus gives meaning to his transformations, and converts his symbolical algebra into a deduction from some fundamental notions of magnitude which he has slowly recovered. Perhaps the reader will say, he must then have discovered or remembered that \( a, b, c, \) &c. stand for numbers, that \( + \) and \( - \) mean addition and subtraction, &c. &c. By no means; the tenor of this article will require us to show another set of meanings which shall fulfill the above-described relations, not only as consistent with each other as the arithmetical meanings, but more consistent; and in the article Operation we shall have to show still further the pliability of the algebraic system, by pointing out that the number of different interpretations under which its symbolical relations will represent truths, is absolutely unlimited. The basis of the algebra which our supposed recoverer of meanings might construct, is geometry, as arithmetical was that of the one which we imagine him to have forgotten, and its definitions are as follows. A plane is chosen and point in it, and a line of a definite length, which may be called the unit-line, is drawn at pleasure from the point, in any direction in the plane. All letters denote lines drawn from the origin, angles being always measured in one given direction of revolution. An equation, \( a = b \), means that the line \( a \) actually coincides with \( b \), or is of the same length, and drawn in the same direction. The sign \( a + b \) means the diagonal of the parallelogram whose sides are \( a \) and \( b \); the latter becomes the sum when \( a \) and \( b \) are in the same direction. The sign \( a-b \) means the remaining side of a parallelogram in which \( a \) is a diagonal and \( b \) one side. Again, \( a \) \( b \) means a fourth proportional to the unit-line, \( a \), and \( b \), directed so as to make an angle with the unit-line equal to the sum of the angles made by \( a \) and \( b \) with the unit-line; and \( a \) \( b \) a fourth proportional to \( b \), the unit-line, and \( a \), placed so as to make an angle with the unit-line equal to the excess of the angle of \( a \) over the angle of \( b \), in the usual direction of measurement (if the angle of \( a \) be the greater), or to the excess of the second over the first, in the contrary direction (if the second be the greater). All the other definitions follow as in common algebra; thus \( a a \) is abbreviated into \( a^2 \), and \( a/a \) means such a line that \( a/a, a = a \). The numbers of arithmetic stand for lines measured on the unit line.

Grant such a change of definitions, and every formula which expressed a truth in the old algebra, expresses another and a very different truth in the new one. We shall now point out how to show (by construction) the truth of the old formula

\[ (a + b) (a-b) = aa - b b, \]
supposing the terms to have their new meanings.

OU is the length and direction of the unit-line, and OA and OB those of the lines \( a \) and \( b \). Hence OC is what is called \( a + b \), and OD is \( a-b \), since it is the other side of a parallelogram which has \( a \) for diagonal and \( b \) for one side. Again, take OE, a fourth proportional to OU, OA, and OC, with the angle OUE double of OUA, and we have what is called \( a a \). Similarly OY is \( b b \), whence OG is \( a a - b b \), the other side of a parallelogram which has \( a a \) for diagonal and \( b b \) for one side. And it will be found on measurement that OY is also a fourth proportional to OU, OC, and OD, inclined at an angle which is the sum of the angles UOC and UOD; whence it is \( a + b \) (\( a-b \)).

To show the truth of symbolical algebra, when the terms have the above-described meanings, would require a small treatise: we shall presently give references to works on the subject. We shall now recapitulate the conclusions at which we have arrived.

1. The conclusions of algebra may be made logical consequences of a few simple relations, without reference to the meaning of the symbols used: all algebra is true when these relations are true, so that the meaning of the symbols which will allow of the truth of these relations.

2. It is not true that there is only one set of meanings under which the fundamental relations of algebra are truths, for those sets have been already alluded to in this article, namely, the common and limited arithmetical meanings, the extensions under which the difficulties of the negative sign disappear, and the geometrical meanings last described.

3. The order of discovery is as follows:—We first ask what sort of magnitude is to be reasoned upon; next, what are the obvious relations existing between such magnitudes; lastly, what is a convenient mode of representing the magnitudes in question; all that follows is an application of the algebraic system to all branches of reasoning. But when we wish to give the idea of symbolical algebra, we invert the order of the preceding questions; and we ask, firstly, what
Thus let us then investigate the consequences attached to the symbols, that they may have prototypes of which the assigned laws of operation are true.

We have two remarks to make before proceeding to the consideration of what are called, in common algebra, impossible quantities.

First, we have talked hitherto of change of meaning in symbols, as if we really passed from one to another and a totally different and even contrary meaning, keeping the same symbol to express both. The word change is too general; it is that particular change called extension which is employed, at least throughout this article. The meaning of a term is said to be changed by extension, or extended, when the new meaning contains all the old, and more; or when all cases which fall under the old meaning fail, and new ones are added. The preceding geometrical definition, the new meaning of \( a + b \) (the diagonal whose sides are \( a \) and \( b \)) contains the old one (or simple addition); if for the two sides of a parallelogram be made to coincide, one diagonal becomes the sum of these sides. If we take the last-mentioned extension of the symbol, it may be made to appear that the old algebra is all that part of the new which treats of lines making no angle with one another. We shall presently see further illustration of it.

Secondly, we have noted the two extreme cases, in one of which we begin with the meanings of all symbols fixed, and in the other of which we have no specific meanings attached to any symbol, but wait for the time when it may be convenient to investigate sufficient meaning for all. But between these two lies the possibility of having found it advisable to affix meanings to some symbols of operation, leaving others only defined by the symbolic relations which dictate the manner of operating, and not further defined in meaning. Thus from the enumeration above given of the definitions of a geometrical algebra, it will be clear that \( a^2 \) means the eleventh geometrical proportional to the unit and \( a \), inclined to the unit-line at 10 times the angle of \( a \). But it would be impossible from that enumeration to decide at once on all the cases of \( a^2 \), for instance, where \( b = \sqrt{-1} \). In such a case, namely, where the meaning of a symbol is left undetermined, we must wait until we can investigate the question whether such meaning is possible to be given, consistently with the meanings attached to the previous symbols. This process is called interpretation, and in this algebra will be found an instance which occurs in common algebra. If such meaning cannot be given, then the symbol is properly impossible; if it can be given in more ways than one, it is usually called ambiguous.

We now drop what we have gathered on symbolical algebra, and take up the science at the point at which such extensions were made as abolished the difficulty of the simple negative quantity. It is then obvious that \( i \), \( i^2 \), or any symbol which can be reduced to it, is the square root of the negative quantity. And herein follows that a negative quantity has no square root, at least none within the range of quantity, as defined, for the squares of all positive quantities are equal quantities. Consequently a such a symbol as \( \sqrt{-1} \) (with reference to this algebra) impossible, just as \( 1 + i \) is impossible in simple arithmetic. This observation is as old as algebra. The 'Vega Gistina' says, 'there is no square root of a negative quantity for it is not a square, may be impossible.'

The impossible quantity however, like the negative one, was admitted among the objects of algebra. Bombelli showed that the case in which the root of a cubic equation is a complicated function of impossible quantities, is precisely like the case of all the roots of the lines and planes, and Wallis and others attempted the explanation of impossible roots, but with no success; they continued to be used as algebraical symbols, and a large number of verified cases led to the following result. Whenever an algebraical operation, beginning with symbols which may be reduced to a symbol in which no impossible quantities appear, that result will be not the less numerically true because the reasoning contains rules of operation on quantity applied to symbols which represent no quantities. This law stood upon the same sort of evidence as a physical law of nature; it was constantly found to prevail. It had also analogy in its favour, for precisely the same law had been observed as to negative quantities, though the explanation of the latter was obtained too narrowly to serve the end of induction in their case.

We must suppose ourselves using the impossible (or imaginary) quantities, not with a view to establish results, but to examine the consequences of applying to them precisely the rules which have been shown to apply to quantities. The following is perhaps the shortest synthetical mode of treating the subject.

If, by rules, we multiply together cos \( x \cdot k \cdot \sin x \), and sin \( y \cdot k \cdot \sin y \), \( k \) being merely an abbreviation of \( \sqrt{-1} \), so that \( k^2 = -1 \), we find as the result, 
\[
\sin(x+y) + \sin x \cdot \sin y
\]
from which relation, as shown at length in Binomial Theorem, it follows that 
\[
\cos x \cdot \sin y = \frac{1}{2} \{\cos(x+y) + \cos(x-y)\}
\]
where \( K \) is a constant independent of \( x \). From this it follows that
\[
\cos n \cdot x = \cos n \cdot (\cos x \cdot k \cdot \sin x)^n
\]
which is called De Moivre's Theorem. It is true for all values of \( n \). Let \( n = 0 \), which gives
\[
\cos \theta = \cos k \cdot \sin \theta = -\cos k \cdot \sin \theta
\]
where \( \theta = m \cdot x \).

The second side may take the form
\[
(\cos x) (1+\chi \cdot \tan x)^p
\]
if \( p = \frac{1}{2} \), and \( x = q \), then it is known that both \( p \) and \( q \) have the limit unity when \( x \) is diminished without limit. The preceding is the product of \( 1 - \chi \cdot \cos x \), and \( 1 + \chi \cdot \cos x \); let these formulae be developed by the binomial theorem, and they become (writing \( \theta = n \cdot x \))
\[
1 - \chi \cdot \cos x = n \cdot \sin x \quad \frac{1}{2} \cdot \chi \cdot \sin x = \frac{1}{2} \cdot \sin x
\]
and
\[
1 + \chi \cdot \cos x = n \cdot \sin x \quad \frac{1}{2} \cdot \chi \cdot \sin x = \frac{1}{2} \cdot \sin x
\]
and
\[
\cos \theta = \cos k \cdot \sin \theta = -\cos k \cdot \sin \theta
\]
the second of which is obtained from the first (which is true for all values of \( k \)) by writing \( -k \) instead of \( k \). From these, by addition and subtraction, the well-known exponential expressions for the sine and cosine are deduced, namely,
\[
\cos k \cdot \sin \theta = \cos \left(1 + k \cdot \sin \theta \right)
\]
expressions which, however widely used, never fail to give true results, in all cases in which they give results containing only even powers of \( k \), or real algebraical quantities.

We shall give a glance at some of thesymbolical consequences of the preceding, previously to entering upon their rational explanation.

1. The representation of impossible quantities. It might be supposed that such a symbol as \( k \) or \( \sqrt{-1} \) would lead to a number of other symbols, just as \( -1 \) led to \( \sqrt{-1} \). Such however is not the case, and it can be easily shown that any algebraical expression, however complicated, which is a function of \( \sqrt{-1} \), can be reduced to the form \( A + B \sqrt{-1} \), where \( A \) and \( B \) are possible quantities. For instance (\( A \) being \( \sqrt{-1} \))
\[
(a + b\sqrt{-1}) = \cos B \cdot k \cdot \sin k \cdot \sin B
\]
where \( A \) and \( B \) are determined as follows. Let 
\[
r = \sqrt{(a^2 + b^2)}, \tan \theta = \frac{b}{a}
\]
then
\[
A = r \cdot \cos \theta, B = r \cdot \sin \theta,
\]
If we take a simple quantity, \( y = a + bk \), then if \( \tan \theta = b/a \), 
\[ r = \sqrt{a^2 + b^2}, \]
we have 
\[ y = r \cos \theta, \quad y' = r \sin \theta. \]

2. The extension of the theory of logarithms. The whole revolution, or four right angles, being \( 2\pi \) [ANGLE], we have 
\[ \cos 2\pi m = 1, \quad \sin 2\pi m = 0, \]
where \( m \) is any whole number, positive or negative. Consequently 
\[ 2\pi n = \cos 2\pi n + k \sin 2\pi n = 1 \]
for all such values of \( m \). If then \( x \) be the common algebraic logarithm of \( y \), positive or negative, we have 
\[ y = x = \cos x + k \sin x, \quad y' = \sin x, \]
so that according to the definition of a logarithm, the moment we admit impossible quantities, and in what sense ever we explain them, from that moment and in that sense we must say that \( x \) being the usual or real logarithm of \( y \), it has an infinite number of other logarithms contained in the formula 
\[ x = 2\pi n + k \].

3. The complete extraction of the roots of any quantity. We know that \( i \) has two square roots, three cube roots, and four fourth roots, since we can find them by common algebra. Now since unity can be represented in an infinite number of different ways, in the formula 
\[ e^{2\pi n i}, \]
and since the \( n \)th root of this formula is 
\[ e^{2\pi n i / n}, \]
we might at first suppose that there is an infinite number of the roots, made by giving different whole values to \( n \). On examining them however it is found that they occur in pairs, each containing \( n \) distinct roots, and each parcel being a repetition of the preceding one. [Roots.]

4. The complete conversion of trigonometry into a branch of algebra. We see that we have given symbolic expressions for the sine and cosine of any angle, which would, were such a thing necessary, enable us to dispense with separate symbols for these functions.

5. Ready means of calculation, by means of the trigonometrical tables, in cases where ordinary means fail. For instance, in what is called the reducible case of cubic equations, Cardan's formula gives the roots in the form 
\[ x = \sqrt{a-b^2} \pm \sqrt{b}, \]
\[ a \quad \text{or} \quad b \quad \text{or} \quad \sin \theta, \quad r = \sqrt{a^2 + b^2}. \]

6. The preceding becomes (making \( k = \sqrt{-1} \)) 
\[ \sqrt{-a \pm \sqrt{(-1)^k}} \]
for \( a \quad \text{or} \quad b \quad \text{or} \quad \cos \theta, \quad r = \sqrt{a^2 + b^2}. \]

8. Since the original suppositions will not be altered by writing \( \theta + 2\pi \) and \( \theta + 4\pi \) instead of \( \theta \), the results of these latter suppositions are equally valid. In the expression under calculation, so that its three values are 
\[ 2\sqrt{r} \cos \frac{\theta}{3}, \quad 2\sqrt{r} \cos \frac{\theta + 2\pi}{3}, \quad 2\sqrt{r} \cos \frac{\theta + 4\pi}{3}. \]

These three are distinct; but \( \theta + 2\pi \) (which might equally be written for \( \theta \)) would give 
\[ 2\sqrt{r} \cos \frac{\theta}{3} \quad \text{or} \quad 2\sqrt{r} \cos \frac{\pi}{3}. \]

A repetition of the first. This amounts to the discovery made by Bombelli. We now come to the explanation of these quantities. Since we have used no rules except those which apply to real positive quantities, and negative quantities, it follows that if we had merely laid down the symbolic foundations of algebra, without reference to the meaning of symbols, the symbol \( \sqrt{-1} \) and formula in which it occurs would have been logical consequences of the relations permitted at the outset, as much as those in which no such sign occurs. It is only when we come to attach meaning to signs, that we can say whether a result is real or not: and a result which is real under the extended meanings may be incongruous and self-contradictory under the limited meanings. Such was the case with the negative quantities. But we have given meaning to \( \sqrt{-1} \) and formula in which it occurs, in a manner less ambiguous than its square, considered with reference to strict arithmetical definitions. The preceding results, then, are rationally true, whenever such a signification is given to the symbols as will, first, satisfy the fundamental relations, secondly, give rational meaning to \( \sqrt{-1} \). Ordinary algebraic definitions only fulfill the first of those conditions.

We shall now turn to the fundamental definitions of what we have called the geometrical algebra; this name is given because it is only in geometry that a subject matter has yet been found, our conclusion being that, without this, there would be no giving meaning to all the symbols which result from the primitive rules. In most of the objects of calculation we can only conceive two states, which we call diametrically opposite, and this geometrical word enters here, precisely because in geometry there are other states of opposition. The weaker character, so that when we wish to express the most decided opposition, we turn to that sort of magnitude in which a less degree can be conceived. Thus we have nothing less complete with which to compare it: between absolute loss and absolute gain there are no gradations. Thus property, debt, or neither, before, after, or now, may be compared with respect of the less than, the greater, and though we can, for instance, imagine time after to be represented by a line drawn north and south, time before by another drawn southward, our power of comparison ends here; it would be impossible to give necessary or even obviously convenient meaning to a line drawn east and west. But in geometry there are an infinite number of directions, no one of which is north or south, all being intermediate. Again, a gradual passage from one state to its opposite can generally only be attained by a passage through the intermediate state in which magnitude vanishes; for instance, a gradual loss of property followed by a gradual increase of debt requires that at one moment there should be neither property nor debt. But in geometry, a line can attain the direct opposite of its first position without changing its magnitude, by revolution round the extremities. These preliminary observations will prevent its being matter of surprise if geometry should be found to admit a wider use of symbols, consistently with rational interpretation, than arithmetic or the algebra derived from it.

We have explained the meaning of \( a + b, \quad a - b, \quad a, \quad b \), from which it follows that we know how to construct \( a, a, a, \ldots \), which we may abbreviate into \( a, a, \ldots \). And we are here in the position just now pointed out, namely, that some of the ordinary symbols of algebra have received meaning, whereas others are yet without it; for instance, \( a = a, \quad a, \quad a, \quad \sqrt{(-1)} \), &c. And since our object is to detect meanings which shall make the symbolic relations of algebra true, we must always interpret exponents so that their meanings may make the following relations exist.

\[ a = a = a = a = a = a, \quad (a^n) = a \]
We shall now proceed with the interpretation of symbols.

1. The symbol \( a \) must stand for a line of length equal, and direction opposite, to that of \( a \); for \( 0 - a \) means the other side of a parallelogram of which the diagonal disappears, one side being \( a \).

2. \( a^n \) must represent \( 1 \cdot a, \quad a^2 \) always represent the unit line; for \( a^2 \) must be such that \( a^2 = a^2 + a^2 = a^2 \), that is, a fourth proportional to \( 1, a, a, a^2 \); moreover \( a^3 \) must be 1 to length. In directions the same as that of \( a^2 \), whence the sum of the angles of \( a^2 \) and \( a^2 \) is that of \( a^2 \), or the angle of \( a^2 \) is nothing. Again, \( a^3 \) must be so explained that \( a^3, a^3, \quad a^2 \), or \( a^3 \), may be the same; whence \( a^3 = a^3 = 1 \).

3. \( a^m \) must be so explained that \( a^m = a^m = a^m \); whence it means the first of \( n = 1 \) mean proportions between \( 1 \) and \( a^n \), inclined at an angle which is the \( m \)th part of the angle of \( a^n \).

It is necessary to notice that any angle \( \theta \) is considered as pointing out a direction, the same thing as \( 2\pi + \theta \), or \( 0 - 2\pi \), or \( 0 \pm 2\pi \), \( m \) being a whole number. That is to
say, a line which sets out from the unit line may be conceived to have attained the position denoted by an angle \( \theta \), either by moving simply through \( \theta \), or by afterwards making any number of complete revolutions in either direction. So long as we multiply angles by a whole number, this makes no ambiguity; for instance, if \( \alpha \) have the angle \( \theta \), or \( \alpha \circ \theta \), the angle \( \alpha + n\theta \), \( n \) all of which indicate the same direction. But if we wish to find \( a^{1/4} \) or to take the first of three mean proportional between \( a \) and \( a^4 \), inclined at the fourth part of the angle of \( a \), then the fourth parts of the angles

\[
\begin{align*}
\theta - 8\theta & , \theta - 6\theta , \theta - 4\theta , \theta - 2\theta , \theta , \theta + 2\theta , \\
\theta + 4\theta & , \theta + 6\theta , \theta + 8\theta , \\
\theta + 10\theta & , \theta + 12\theta , \theta + 14\theta , \\
\theta + 16\theta & , \theta + 18\theta , \theta + 20\theta ,
\end{align*}
\]

giving a succession of directions, each of which differs from the preceding, not by four right angles, but by one right angle. There are then four distinct meanings of this symbol \( a^{1/4} \).

5. The symbol \( \sqrt{-1} \) stands for a line equal in length to the unit line, and inclined to it at a right angle; for \( 1 \) and \(-1 \) make two right angles with each other, whence \( 1 = \sqrt{-1} \) or \(-1 \) make the mean proportional between \( 1 \) and \(-1 \) inclined at half that angle, or at a right angle. Similarly \( \sqrt{-1} \) is in the opposite direction, and makes three right angles with the unit line. Also \( \sqrt{-1} \) or \(-1 \) is a line inclined to \( a \) but making an angle with the unit line larger by a right angle than the angle of \( a \).

6. Any line may now receive a simple representation; for the line \( a \), inclined at the angle \( \theta \) to the unit line, is the diagonal of a rectangle, of which the side in the direction of the unit line is \( a \cos \theta \), and the other side, parallel to the unit line in length \( a \sin \theta \), so that its symbolic representation is \( \sqrt{a} \sin \theta \). Hence the line \( a \), inclined at the angle \( \theta \), is

\[
\rho = \cos \theta + \sqrt{-1} \sin \theta.
\]

Hence we see the meaning of the symbol \( a, \theta \sqrt{-1} \); for since the definitions satisfy all the fundamental relations of algebra, the theorem

\[
\phi \sqrt{-1} = \cos \theta + \sqrt{-1} \sin \theta
\]

which is a necessary consequence of these relations, required to define the first side as to establish its identity of meaning with the second. Consequently, if \( A \) being \( \sqrt{-1} \), must represent a line equal in length to the unit line, inclined at an angle \( \theta \).

To enter further into the details of this extension of algebra would require too great a length; we shall now proceed to mark out its limits.

If any one should object that it is founded on geometry, we answer that it is not so much founded on geometry as applied to it. The symbolic algebra, which we draw in the first instance from arithmetical suggestions, and afterwards out loose, so to speak, from that science, founding it upon purely symbolic definitions, is applied to geometry, because in the latter science, and in the latter only, do we find notions of magnitude, the different affections of which are sufficient to supply rational meaning to all its symbols. Let us now produce other ideas of magnitude, of loss and gain for instance, as varied in their different operations, and the general truths of symbolic algebra will find a new application.

The subject-matter of the preceding algebra is geometry of only two dimensions; whereas it might be supposed that the application would never be complete until it embraced geometry of three dimensions. No such extension has however yet been made; though it is not unreasonable to suppose that it may be made at some future time.

But we may be said that this new algebra, being based upon its own definitions, however logically its conclusions may follow from those definitions, can afford no aid to the common algebra in explaining those quantities which are at present in the latter as they are possible in the former. What does it profit us if we are told with symbols which upon our own definitions we cannot rationally explain, to know that those same arbitrary marks, being made to have other meanings, would not present the same difficulties? It may almost seem as if we should relieve ourselves from the trouble of investigating the error of a process which ends in \( a + b \sqrt{-1} \) or \( a + b \sqrt{1} \), or those who should mean by 5 what we mean by 4 would not see any necessity for revising the operations. The difficulty thus broadly stated must be felt more or less by every one who can entirely make up his mind, if not to the reception of the last to the presentation of the same algebra. The answer is as follows:—

In the common operations of algebra we do not set particular value upon any symbols or meanings, except so far as they answer our purpose. If that purpose be the discipline of the mind, the more practical the better; and as the enlargement of its power takes place so must happen when it begins to comprehend that any set of definitions may be such as to require restriction upon operations; so that the object is, the enlargement of the definitions to an extent which will allow all being rationally explained. If it be one of the errors to which our bounded faculties are liable, that we may invent the processes and mechanism of a genius upon the definitions incidental to the consideration of a species, or anything of that kind, we have only to remember, which is well worth the trouble, even leaving out of consideration the expansion of views which is obtained by the investigation of the correction. But if the purpose be the conversion of a formula for practical use, whether in physics or any other branch of knowledge, we shall be more indifferent than the manner in which our result is obtained, provided only we are sure of its truth.

When we reason upon the principles of the old algebra, we seem to stumble upon the truth of our results, partly by actual verification, partly by the application to the nature of symbolic algebra which preceded the new science. But it was not always possible to arrive at the highest degree of mathematical assurance, for even in cases where a result could be obtained from impossible quantities, the intermediate steps could not always be fully comprehended; and their verification, if required, was sometimes (though not often) imperfect: and in every case it must be remembered, no result was fit for actual application until the possible quantity of its appearance was investigated.

Let us say that we are now considering such a case, namely, one in which quantities impossible in ordinary algebra have been used in the process, though they disappear in the result. The consequence is that if the extended definitions were employed, this process would be found to have been drawn in the direction of the unit line if anything but the contrary direction if negative; and the same of the symbols of which the answer is a function. But for lines measured in that unit line the extended definitions coincide with the ordinary ones, as has been said, so that as far as the result is concerned, we are sure of the same answer (when there is an answer that we call possible), whether we employ one or the other set of definitions; with the advantage of being able, in employing the new definitions, to put a real interpretation upon the process.

But has the new algebra no impossible quantity peculiar to itself? We cannot tell, for all time to come, what the answer to this question shall be; at present we can reject that though there are symbols which would indicate previously inconceivable results if they appeared in our result, yet they are none which do not admit of interpretation. For instance, we see that angles in our definitions may be positive or negative (measured on one side or the other of the unit of angle); we have no angle which \( \sqrt{-1} \) can represent. If then, in the most extensive of our ideas of the question, 'At what angle must a line assumed \( A \) be inclined to satisfy such and such conditions?' were. 'The angle must be \( a + b \sqrt{-1} \)', we should at first say that such a question was impossible. But if we examine further, we see that a line \( A \) applied at an angle \( a + b \sqrt{-1} \) is represented by

\[
A \left( e^{a+b} \sqrt{-1} \right) \sqrt{-1} \] which is

when treated by symbolic rules. We should conclude then that we have made some error by which \( A \) was determined in a manner which cannot satisfy the conditions, but that a line equal in length to \( A \) inclined at an angle of \( a + b \sqrt{-1} \) is treated by the ordinary rules. This answer must at least be examined, before it is asserted to be impossible. The following formula, if they occur, may be interpreted by
the identical expressions given in the second sides \((k = \sqrt{-1})\)

\[
\cos(a + b k) = \cos a - e^{-b} \sin a \quad \frac{e^{b} - e^{-b} i}{2} \cdot k
\]

\[
\sin(a + b k) = \sin a + e^{-b} \cos a \quad \frac{e^{b} + e^{-b} i}{2} \cdot k
\]

The whole of the ambiguous cases of algebra depend upon this, that any quantity \(x\) can also be represented by \(x = e^{i\theta}\), where \(a\) represents any whole number of revolutions. As long as only multiples of \(\theta\) occur, different appearances of \(x\) present themselves, not indicating real alteration other of length or direction; but when such multiple of \(\theta\) occurs, an alteration of direction takes place, unless such multiple be also an exact number of revolutions.

The logarithmic theory of the most extended algebra merits a particular notice. It is remarkable that the first hint towards purely symbolical investigation, conducted entirely with reference to the common algebraical definitions, some years ago Mr. Graves\(^*\) asserted that the logarithms of unity, in the most general sense of the term, should be contained in the formula

\[
2\pi m \sqrt{-1} \quad \text{instead of} \quad 2\pi m \sqrt{-1};
\]

and \(m\) and \(n\) being any whole numbers.

If we define a logarithm by the symbolic relation \(a^{n} = x\), where \(a\) is an arbitrary base, and if, for well-known reasons of a purely numerical character, we assume \(a\) to be always positive, we may ask what is the logarithm of a unit \(a\) inclined at the angle \(\theta\), the base being \(a\) inclined at any angle \(\phi\). The answer must be such a value of \(x\) as will satisfy

\[
\left(\frac{e^{i\phi}}{1 + i\phi}\right)^{x} = \theta, \quad x = \frac{\theta}{1 + i\phi}
\]

in which, if we may do, we increase or diminish either \(\phi\) or \(b\) by a whole number of revolutions, we find, as in other cases, that a line which has attained a certain position by one number of revolutions, remains itself in the same position, and sometimes in results, from the same line in the same position, attained by another number of revolutions. If our unit be in the unit line after \(m\) revolutions, and the base be also in the unit line after \(n\) revolutions, the logarithm of such a unit to such a base as was given in the above formula by Mr. Graves. Nor is the preceding process impossible: for it shows a set of real operations by which \(x\), inclined at an angle \(\phi\), might be converted into a unit inclined at an angle \(\theta\) if we ask whether the fundamental properties of logarithms remain true, we shall find that the logarithm of a unit added to the logarithm of a unit differently inclined, and with a differently inclined base, is a logarithm of a unit in which both the angles have received another alteration. If the logarithms of two units inclined at angles \(\phi\) and \(\phi'\), to bases inclined at \(\theta\) and \(\theta'\), to be added together, the result is the logarithm of a unit inclined at an angle

\[
\theta + \phi - \theta(1 + i\phi) + \phi'(1 + i\phi')
\]

to a base inclined at the angle

\[
\theta + \phi' - \theta(1 + i\phi) + \phi'(1 + i\phi')
\]

But these conclusions do not hold when the logarithm of \(a\) is added to that of \(b\), and \(a\) and \(b\) not being units, and the bases being differently inclined: nor is it necessary here to state the extensions which the above formula must receive in such a case.

The following list contains all the recent works of which we can collect the titles, in which general algebra, or the difficulties which preceded its introduction, are considered. The manuscripts of \(\text{Phil. Trans.}^{1802}\); Woodhouse, \(\text{Phil. Trans.}^{1803}\); Bucé, \(\text{Phil. Trans.}^{1806}\); Argand, \'Essai sur la Manière de représenter les Quantités Imaginaires,' \(\text{Paris,}^{1814}\); various papers in the \(\text{Annales de Mathématiques, for 1813,}^{1814}\); Comportz, \'On the Principles and Application of Imaginary Quantities,' \(1817\) and \(1818\).\footnote{Warren. On the Geometrical Representation of the Square Roots of Negative Quantities, Cambridge, 1828 (the first systematic elementary work based on extended definitions); Peacock, 'Treatise on Algebra,' Cambridge, 1830 (the first work on symbolic algebra); Davies Gilbert, 'Phil. Trans.,' \(1831\); On the Nature of Negative and Imaginary Quantities; Peacock, Report on certain branches of Analysis, in the Report of the Third Meeting of the British Association, London, 1834. (This work contains the modern history of extensions, and is the account of several of those above cited.) See also a Review of Professor Peacock's 'Representation of the Square Roots of Negative Quantities,' in 'Library of Useful Knowledge,' chapter xiv.

We cannot omit to mention a paper by Sir William Hamilton, recently published in the 'Transactions of the Royal Irish Academy.' The author treats algebra as the science of time, not of magnitude; and as far as the explanation of positive and negative quantities are concerned, it is not difficult to follow him. The symbol \(\sqrt{-1}\) however is of a harder character. M. Cauchy and others had previously considered it as merely a symbolical contrivance to express the coexistence of two antagonistic signs, since

\[
a + b \sqrt{-1} = c + d \sqrt{-1}
\]

is a well-known method of implying \(a = c\) and \(b = d\), both in one equation. The manner in which Sir William Hamilton has connected this system with his theory, is so striking that we must insist upon saying that, if his science of time were re-written from the beginning, in a science of magnitude, his explanation of impossible quantities would fall back into the one just alluded to; and it is difficult to describe it more fully without entering further into the matter than we have room for. We are inclined to think that this explanation of algebra with reference to time may finally be admitted as one method of supplying the foundations of the purely symbolical science; but we must confess ourselves not yet sufficiently clear upon the subject in which the order in which the latter is connected with its definition, to hazard a positive opinion.

\text{NEGRO. [MAN.]}

\text{NEGROPONT. [EUBEA.]

\text{NEGUNDO, a genus of trees, separated from Acer because of its pinnated leaves and denticulate apetalous flowers. Two species are known, one of which is a handsome hardy tree, inhabiting the United States of North America, and now common in the gardens of this country; the other is native of Mexico, and is present but little known: it may be a mere variety of the other.}

\text{NEHEMIAH. [ZERAT.]}

\text{NEISSE is a principality in Silesia, the larger portion of which contains 488 square miles, with 110,000 inhabitants, belongs to Prussia; the remaining part, 320 square miles, with 56,000 inhabitants, belongs to Austria. The Prussian portion is very fertile, but the Austrian part is mountainous. Till 1820 the whole principality belonged to the bishop of Breslau, who now possesses only the Austrian portion, with the title of a duchy; the Prussian portion is converted into a royal principality, including the circles of Grottkau and Neisse, in the government of Oppeln.}

\text{Neissk, the capital, in 51° 25' N. lat. and 17° 29' E. long., is situated in the Prussian portion, at the conflux of the rivers Neisse and Bie, in a marshy and unhealthy spot, 574 feet above the level of the sea. It is said to have been founded in the year 961, and was not fortified until 1294; since which time it has undergone several sieges, and its works have been gradually strengthened and extended, so that it is now one of the most important fortresses in the Prussian dominions. In 1743 Frederick II. laid the first stone of Fort Prussoen, on an eminence, at the foot of which is the newly-built and strongly fortified suburb Friedrichstadt, which extends to the Neisse. The fortress is surrounded by broad and deep moats, and the surrounding country contains under water in one lake, 800,000 cubic yards, and a new-built town. The public buildings are, a splendid episcopal palace, six Roman Catholic churches, a Protestant church, a Catholic gymnasium, a town-hall, and a synagogue. There are numerous schools and charitable institutions. The gymnasium has besides the line collections of books, but the library of 10,000 volumes was destroyed in the siege in 1807. As the capital of the principality and the

\text{Volume xvi.-t}\n
\text{P. Cc. No. 994,}
circle, the town is the seat of the courts of justice and different public offices; and the inhabitants, who are about 11,000, gain their subsistence by breweries and manufactures of linen, woollen, ribands, and stockings, and a great trade is also carried on in the manufacture of rice and a powder-mill. In the environs there are quarries of excellent freestone, of which considerable quantities are exported.

NELEDSKY-MLEZTZKOV, YURI, the most eminent story-writer Russia has yet produced, was born in 1751, and served in the campaigns against the Turks, from the year 1770 to 1774, and, after the peace between the two countries, accompanied the Russian mission to Constantinople. Subsequently an office in the civil department was bestowed on him by the emperor Paul, and in 1776 he accompanied that sovereign in his journey to Kazan and White Russia. This last mark of the imperial favour was followed by others of a more substantial nature, for an estate with several hundred peasants was shortly after allotted to him as the reward of his services, besides the order of St. Anne, to which that of St. Alexander Nevsky was added in 1809.

Though, considered singly, his songs and ballads may appear unimposing, yet a high literary effort or ambition, they prove him to have possessed a decided talent for that species of composition, and the power of infusing into it a gracefulness and charm for which the language afforded no previous models. To great simplicity and warmth and warmth of feeling. He died in 1829, at the age of 78.

NELLA MALA MOUNTAINS. [HINDUSTAN, vol. xii, p. 206.]

NELLORE, a district of the Carnatic province, lying between the 14th and 16th degrees of north latitude. It is bounded on the north by Gunpore, on the east by the Bay of Bengal, on the south by the river Blu dwelling Aroet, and on the west by Cuddapah. The district is well watered by many streams, which rise in the Eastern Ghauts and fall into the Bay of Bengal. It is also traversed from west to east by the Pennar. The principal towns of the district are Nellore, Ongole, and Sarapilly.

The Ryotwary system prevails almost universally in Nellore, the cultivator paying the rent of the land directly into the hands of the government collector. The gross revenue received in 1817 amounted to 68,839l. As regards the number of the population, very different estimates are given. According to returns made to the government of Madras in 1822, the total population was 439,467; while the number of inhabitants according to a statement laid before the Legislative Council in 1828 was 438,556 males and 439,467 females, together 839,467. There is evidently a great mistake in one of these statements; and it is probable, as the difference amounts to the number of 400,000 exactly, that the error has resulted from the accidental substitution of one line for another in the returns of 1828; the larger number being given with more circumspection, has the greater appearance of exactness.

Some copper-mines have been found in the district, but not under circumstances that admit of their being profitably worked. A considerable quantity of salt is made for account of the government on the coast near the town of Nellore.

The town of NELlore is situated on the south bank of the Pennar river, in 14° 29' N. lat. and 80° 5' E. long. The town is defended by a moat, with some remains of stone at intervals. It is a populous place, and a considerable amount of business is carried on by the inhabitants: the principal street, which is three-quarters of a mile long, is composed of well-furnished shops, but there are no handsome buildings in the town. The town has a ferry across the Pennar, which is here three-quarters of a mile wide.

Ongole, in 15° 31' N. lat. and 80° 8' E. long., is irregularly built, and contains very few buildings better than mean; the town has a market and bazaar. It is a fort, in which a small English garrison is constantly stationed. Sarapilly is a place of no importance, in 14° 19' N. lat. and 80° 2' E. long.

NELSON, ISOBODA. [ISOBODA, vol. xiii, p. 53.]

NELSON, ROBERT, born 1656, died 1714, author of various works in practical divinity, which have long been held in very high estimation by serious and pious persons.

He is also remarkable for having been a bountiful contributor, both during his life and at his death, to institutions for the education of the poor and the diffusion of Christian knowledge.

He was the grandson of Lewis Robert, a merchant of London, who is believed to be the person of that name who wrote 'The Merchant's Map of Commerce,' printed in 1639, and whose descendants, the Roberts, Nelson, and Hanger, were extremely engaged in the trade to the Levant. He was himself constantly engaged in it, but he never appear; but he was of Trinity College, Cambridge, and while a young man elected a Fellow of the Royal Society. He was intimate with Halley, with whom he travelled in Free and India.

It was while at Rome that he met with the lady who became his wife in 1682, Lady Theophila Lucy, widow of a baronet and daughter of the earl of Berkeley. This lady was a Roman Catholic, having been led to enter that church by the clergy of Bossett.

This circumstance was a great grief to Mr. Nelson, whose mind was much occupied with the consideration of both the practical and controversial points in divinity, and whose chief friends were eminent divines in the English Church. He, however, obtained the permission of the Bishop of London, and Titus, the last especially was his intimate friend.

At the Revolution he scurped to take the oaths to King William, and remained a non-juror till the year 1709, when he returned to the Church of England as then established.

He died at Kensington, and was buried in the cemetery of St. George's, Queen-square.

The following are his principal works:—Practise of True Devotion, relating to the Sacraments, Religions; 'Companion for the Festivals and Feasts of the Church of England;' 'Great Duty of frequenting the Christian Sacrifice;' 'An Account of the Life and Writings of William Kettewell.' He also published the English version of Bossuet's 'Discourses.'

The long inscription on Mr. Nelson's monument, written by Bishop Smalridge, may be read in the 'Literary Anecdotes of the Eighteenth Century,' by John Nichols, vol. iv, 1800, where is a fuller account of the subject of this article.

NELSON, HORATIO, son of Edmund Nelson, rector of Burnham Thorps, and Catherine his wife, was born at his father's residence in Norfolk, on the 29th September, 1758. His mother died in 1762, leaving eight children, for whom an early provision was desirable, on account of the slender income of their father. Nelson had neither a strong frame nor a sturdy constitution, yet his weakness did not prevent him from following the line of his uncle, Captn. Nelson, the then commander-in-chief, who was soon a reward paid off, and sent him on a voyage to the East India's ship, to which his relation was appointed, being objectable for a boy, he entered the merchant service, and sought active employment in an outward-bound West Indian's ship. Mr. Southey says, 'He returned a good practical seaman with a hatred of the land service, and a saying then common among sailors, "aff the most honour, forward be a better man." To remove this hatred, his uncle received him on board his guard-ship in the Thames, and though the life of the ship was most light, yet it was observed to be advantageous to Nelson in two respects; it enabled him to overcome his prejudice against the navy, and acquire skill in piloting, which he afterwards turned to good account. By his uncle's influence he obtained a rating of a private in the Carondelet, 80.Lt. Warwicks, and subsequently lieutenant of the Lowestoffe off the Bristol; commander of the Badger, brig, in Dec., 1778; and post-captain to the Hinchinbrooke, June, 11, 1779. He distinguished himself in the siege of Fort San Juan, N. W. he took the island of Barbados for Sir Robert Pigot, and his haranguing speech reduced his crew from 200 to 10 men, and Nelson, an order of desistance by disease, was obliged to return home. The health water having restored him, he was appointed to the Albemaria.
is which he cruised during the winter of 1781-2 in the
North Sea, whence he was ordered by Lord Sandwich to
Quebec. On this station he remained until peace was
concluded, when he went for a short time to St. Omer. He
was appointed to the Boreas, 38, and sent to the Leeward Islands,
in 1784. The Americans were then trading with the
British colonies on the footing of British subjects, but
as they had become foreigners by their separation from Great
Britain, and as such were not allowed to trade with those
islands, Nelson determined to put a stop to these proceed-
ings, and on the 26th R. H. Scarte, in command of the
navigation act, which orders however were subsequently
retracted. Nelson then found he must either disobey his orders
or the acts of parliament; he determined on the former, and
sailed four American vessels from the island of Barbadoes.
The whole colony rose against him, but the
ships were ultimately condemned in the admiralty court.
He married at Nevis, 4th March, 1787, the widow of Dr. Nis-
bet, a physician, and daughter of Mr. Hervert, President of
the Board of Trade, in England in June, 1787, and lived in retirement till the
eve of the French revolutionary war, when he applied for em-
ployment. On the 30th of January, 1793, he was ap-
pointed to the Agamemnon, of 64 guns, and took with him
Joseph Vines, as master, and the commodore Linzee at
Hood's orders, reached the south of France at a time when
it would willingly have become a separate republic under
the protection of England. Nelson was sent with des-
patches to the court of Naples, where he became acquainted with
Tenerife, with Norfolk, and on the 3rd of May, Lord
Hood, with Nelson as his senior captain, de-
termined to reduce that place with a naval force, General
Dundas having refused to co-operate. The garrison capit-
aured to Lord Hood, 3rd May, 1793. On the 20th of May,
whither the Agamemnon was sent to co-operate with Sir
Charles Stuart, Nelson lost an eye, from a shot striking the
ground near him and driving the sand into it. Here the
days and an epidemic thinned his crew, whose health was
impaired by the small supplies on board, and he lost
Hotham who had succeeded Lord Hood in the Medi-
erranean command, and in the partial action with the French
fleet which took place soon after, the Agamemnon engaged the
Calvi; the operation was renewed on the following day, when
the Agamemnon was taken, together with the Censor. Nelson was desirous of
continuing the operation with the rest of the fleet, but the
admiral was satisfied with this slight success. The next
service on which he was employed was the blockade of Genoa,
in command with the British army, in order to drive
the French out of that state. He had a squadron of
frigates under his orders, and narrowly escaped capture by
the French fleet within sight of the English fleet, which
was becalmed in St. Florento Bay. In both the partial action
and the main action with the French ship L'Alcide, 74, was taken,
but burnt by the explosion of some combustibles then in
use among the French. Only 200 of her crew were
saved. The Austrians, being beaten, gave the French
possession of the island of Sardegna, and Nelson had his
gazetted to be alert. Sir John Jervis took command of the
Mediterranean fleet in 1792, and Nelson resumed his
station in the Gulf of Genoa. He next superintended the
evacuation of Bastia, and having effected this, proceeded in
the Agamemnon to the island of Malta, which was recaptured,
but his orders were not carried out, and he had to sail
with the fleet at the mouth of the Straits, and joined Sir J.
Jervis with the intelligence. He hoisted his broad pendant
as commodore on board the Captain, 74 guns, Captain R.
W. Miller, and was eminently distinguished in the general
action of February 14, 1797, with the Spanish fleet, in
which the Captain, after engaging, with the Culloden, three
first-rates and three others, being at length crippled, fell
alongside the San Nicolas, of 80 guns, and carried her by
boarding. Nelson himself on this occasion boarded through
the cabin windows. The San Josef, of 112 guns, was lying
in the other side, and the boats of the San
Nicolas to her, with the cry of 'Westminster Abbey victory!' Their efforts were crowned with success, and on
the quarter-deck of this Spanish first-rate Nelson received
the swords of the rear-admiral and his officers.

Surely the news of this signal success was greatly
welcomed. Nelson had been promoted to the rank of rear-admiral; the
order of the Bath was now bestowed on him, and the freedom
of Norwich was voted to him, to which city he gave the sword of
the Spanish rear-admiral. He now hoisted his flag in the
San Josef, and commanded the fleet in the
blockade of Cadiz. On the 3rd July, 1797, Lord St.
Vincent bombarded that town. In withdrawing the bomb-
vessel out of gun-shot, the Spanish gun-boats and launches
efforted to capture her, but were successfully met by
a similar force under his command, in which the Spanish com-
mander attempted to carry his boat, and both distinguished
themselves personally in a hand to hand fight. His next ser-
vice was an unsuccessful attack on the town and fort of Santa
Cruz, on the 21st of August, the loss of the ship, and three frigates - the British gained a footing on the main-
land, but were repulsed. In the act of steering out of his
boat, Nelson received a shot through his right elbow. He was
with difficulty carried on board his ship, where the arm was
impaired, and he yielded to the loss of the
right arm, and to a large wound in his neck. He was
employed at Bastia and Calvi; had assisted in capturing
seven sail of the line, six frigates, four corvettes, and eleven
cutters; had captured fifty merchant vessels, and been in action in action on two
times; lost his right eye and arm, and sustained other
severe wounds. He also received a pension of 1000l. a
year, and the freedom of the cities of London and Bristol.
Early in 1798, Sir Horatio hoisted his flag in the Vanguard,
and joined Lord St. Vincent at Gibraltar, by whom he was
employed to watch the French fleet, and, if possible, to
retake the town of Calvi; but the expedition for Egypt was
then fitting. The Vanguard was dismasted in a heavy gale of wind off Toulon, on the
20th, and, during the thick weather that followed, the
French fleet escaped. Having refused his ship, and being
routed by the enemy, he was ordered to return to the line,
and, on the 28th August, joined with the Vanguard in the
French fleet, with the following ships:—Culloden,
Goliath, Minotaur, Defence, Beleropophon, Zealous,
Swiftsure, Alexander, Orion, Theseus, Audacious, and
Leander, all of 74 guns.
Nelson heard of the enemy's armament at Malta, and
shaped his course to Cadiz, but getting no tidings there,
he returned to Sicily. Having obtained supplies at Sy-
racuse, he sailed for the Mores on the 25th July, obtained
intelligence at Corun, and, not finding him to shape his course
for Alexandria, where he arrived August 1, 1798, and
found the French fleet lying in the bay of Aboukir. The
haziness had prevented the two ships from perceiving each
other, although they actually crossed in the night of the
1st and 2nd of August. On the 1st July, and Brueys,
unable to enter the long-neglected port, moored his fleet, consisting of one first-rate,
two second-rates, nine seventy-fours, and four frigates, in
Aboukir bay. On perceiving the enemy's position, Nelson
sailed by Lord Hood, the commander of the Road, but which he had there found impractical, of
stationing his ships one on the outer bow, and another
on the outer quarter of each of theirs. The action
commenced at 6h. 20m. p.m., August 12th, and at noon of the
13th, the French fleet one ship had been taken,
seven surrendered, two escaped, and two were aground, of which
one yielded, and the other was burnt by her crew. The loss
sustained by the English was 218 killed, and 578 wounded;
that of the French is variously stated, but it probably
amounted to 2000 killed, wounded, and missing. Brueys,
T 2
after being thrice wounded, was blown up in his ship L'Orient, part of whose mainmast was made into a coffin by order of Captain Hallowell, and by him presented to Nelson. Nelson received a severe wound in his forehead from a piece of iron from the Caledonia gun, but the composure of the action, and was unable to take part in it. On this occasion Nelson was created Baron Nelson of the Nile, and pensions of 3000l per annum were settled on him and his two next heirs male. The thanks of the parliament and gold medals were accorded to him and the other captains and seamen of the action. From this time Nelson remained chiefly employed on the Neapolitan coast, during which period he sanctioned that which must ever remain a blot on his character, and which tarnished the honour of the British flag. Carraccioli was taken, and Nelson, now surrendered to the naval force under Nelson's orders. In February, 1800, Nelson sailed for Malta, and captured the French ship of the line Généreux, which escaped from Aboukir, and was also a frigate. On April 13th Nelson returned from England. Nelson came home, leaving Captain Trowbridge in command of the squadron blockading Malta, which island capitulated in September, 1800. Within three months after his return, he separated from Lady Nelson, in consequence of her health not recovering to her satisfaction. He sailed March 12, 1801, as second in command to Sir Hyde Parker, to the Baltic, with a fleet of eighteen sail of the line, frigates, bombs, fire-ships, &c., amounting in all to fifty-three sail, having on board the 49th regiment, two companies of Foot Guards, and a detachment of six officers and men. The fleet arrived in the Sound, and after some time lost in negotiation by Mr. Vansittart, anchored between the island of Huen and Copenhagen. Lord Nelson having offered his services in the attack on the fort, which was with- drawn, and the English took the line and smaller craft, making thirty-six sail, 1st April, 1801, and anchored at dark off Drago Point, two miles from the Danish line. The formidable force opposed to the British consisted of eighteen vessels, mounting 628 guns, and 34 pounders, and 68 guns, mounted by 484 boats, hero-moored in a line a mile in length, flanked by two batteries, called Trekroner, of thirty 24-pounders and thirty-eight 36-pounders, with furnishings, commanded by block-ships. The action commenced at nine A.M. and lasted five hours, when a truce was agreed upon by the commodore of the West Danish adjutant-general to the commander-in-chief to settle the terms, in reply to Lord Nelson's celebrated note: 'Vice-Admiral Lord Nelson has been commanded to spare Denmark when she no longer resists. The line of defence converted itself to hazardous attempts to break the British flag; but if the firing is continued on the part of Den- mark, he must set on fire all the prizes he has taken, without having the power of saving the men who have so nobly defended them.' The brave Dane was right; the brothers of the West should never be the enemies of the English.' The British killed and mortally wounded were 399; and the wounded 850. The Danish loss was estimated at between 1600 and 1800 men killed and wounded; of the eighteen floating batteries, seven were taken or destroyed.

Amicable relations having been restored between England and the northern powers, Lord Nelson returned in command of the squadron to England (Sir Hyde Parker having been recalled), when the thanks of parliament were voted to him for Copenhagen. To allay the public alarm excited by Bonaparte's proposed invasion, Nelson took the command of the shores, reconnoitred Boulogne in the Medusa frigate, attacked the flotilla in the mouth of the harbour, and in the action of 12th March gained a most important advantage. From this time he lived in retirement in Surrey, till he was called on to assume the Mediterranean command. He hoisted his flag in the Victory, on war breaking out in 1803. His chief employment was watching the French in Toulon. On the 12th January, 1805, the French fleet set sail for sea under vice-admiral Villeneuve, but was driven back by heavy gales. Villeneuve sailed again on the 29th of March, received a reinforcement at Cadiz, and made for Martinique, with seventeen sail of the line, seven frigates, and four sloops. On 1st May, Nelson sailed for the West Indies in pursuit of Villeneuve with ten ships of the line and three frigates, and arrived at Barbadoes on the 4th of June, on which day Admiral Villeneuve sailed from Martinique, and having effected nothing except the recapture of the Diamond Rock, returned thither with a considerable force of 966 men. Hounslow, returned to Europe, and arrived off Cape Fins- terro, July 9. Lord Nelson quitted Antigua, June 18th, and made Cape St. Vincent, July 17th, having been absent sixty-six days. Thus frustrated in his plans, he judged best to reinforce the Channel squadron, lest the enemy should bear down on Brest. With the ships joined Admiral Cornwallis of Ushant, and leaving his fleet there, he went home, and struck his flag. He hoisted it again in the Victory on the 13th of September, 1805, and arrived off Cadiz on the 29th (this birth-day), to take command of the Mediterranean. Nelson called to him for the direction of the action, and was unable to take part in it. In this action Nelson received the death-wound by a musket-ball fired from the Redoubtable, which entered his left shoulder, and lodged in the spine. He expired on the three hours' duration of the engagement. Nelson was 45 killed, 1250 wounded. Seventeen French and Spanish ships were captured, and one burnt. Admiral Dumasoir escaped to the southward with four sail, which were shortly after taken by Sir R. Strachan. Admiral Grima, commanding the Spanish fleet, surrendered his commander-in-chief. On the 9th of January, 1806, the body of Nelson was buried at St. Paul's. His brother William was created an earl, with a grant of 6000l per annum; 10,000l were voted to each of his sisters, and 150,000l for the purchase of an estate.

Sir James Mackintosh says, 'Nelson seems to have been born with a quick good sense, an affectionate heart, and a high spirit; he was susceptible of enthusiasm either of the tender or the proud feelings, and easily melted or inflamed; one day it was asserted by the prime minister that Nelson was a mere politician; he was not a politician, he was a monarch; he was merely averse to falsehood or artifice, but he was in the highest degree simple and frank. These qualities formed no small part of his genius; they secured to him attachment and confidence, and revealed to him the feelings of other men, the weakness of his hearth, the delicacy of his own. He alone can never dispose. His understanding was concentra- ted on his profession, and as danger always excites when it does not disturb, by stimulating his mind in the moment of danger, Nelson did not possess the distinction of intelligence, it is still more, that he was to the highest degree a man of genius, and that he possessed, in the highest degree, the artifice, which distinguished him from other modern heroes; while the murder of Caraman and his breach of faith to the two garrisons in the Bay of Cadiz was the most atrocious of crimes committed for the service of the state, Nelson never believed the prisoners or their ringleaders deserved death, and thought that the existence of the government required a terri- ble example; by this error in judgment, by the drunken- ness of guilless passion, and the maddening power of polit- ical fanaticism, he was deluded by these despicable acts.'

'The death of Nelson,' says Southey, 'was felt in England as a public calamity; yet he cannot be said to have suffered prematurely whose work was done, nor ought he to be bidden to lament who did so full of honours and at the height of human life.

(James's Naval History; Southey's Life of Nelson; Sir J. Mackintosh.)

NELUMBIA CEA, a natural order of exogenous plants, by some writers associated with the Ephedraceae. Water- lilies, which resemble in appearance and manner of life, inhabiting the fresh waters of the temperate parts of the world, and producing large polycaled flowers with numerous stamens. But these orders differ in such important facts as the British loss of seventy ships of very close alliance, much less as members of the same order; for Nelumbiacee have no albumen, and their system of female organs is broken up into its original elements, while in Nymphaeeae there is an abundance of albumen, and the seed is too numerous to sail on the water. The species of Nelumbiacee are readily known by their carpels being distinct, one-seeded, and buried in the cavities of a large
truncated flabby receptacle, which eventually forms a broad hard bed, filled with holes, in each of which there is a single ripe nut. Notwithstanding its large flowers, these plants must be regarded as among the lowest forms of the exogenous type. The best known species is Nelumbium speciosum, a magnificent water-plant floating in the rivers and ditches of all the warmer parts of Asia, and also found in the Nile. Its nuts are supposed to have been the sacred bean of Pythagoras; its flabby stems are used as food by the poorer inhabitants of China.

Nelumbium speciosum.

1. the ripe receptacle of Nelumbium speciosum; 2. a seed; 3, the same, with the two cotyledons so expanded as to show the large plicate which they cover.

**NEMATOPODA.** (Cirripedia.)

**NEMATURA.** (Chthioidea.)

**NEMEAN GAMES,** one of the four great national festivals of the Greeks, derived their name from Nemesis, a village in the north-eastern part of Argolis, on the borders of the Corinthian territory. They were celebrated under the presidency of the Corinthians, Argives, and inhabitants of Cleonem (SchoLaat, on Pindar); but in later times they appear to have been entirely under the management of the Argives. (Liv., xxiv. 41.) They are said to have been celebrated every third year; and sometimes, as we learn from Pausanias, in the winter (II. 15, § 2; vi. 16, § 4).

The Nemean games are said to be the oldest games in the world. The victors were made parley, and are distinguished by the form of their victor over the Nemean lion. The crowns bestowed on victors were made of parsley.

**OLYMPIC GAMES.**

**NEMERTE'SIA.** (Sertulariaria.)

**NEME'SIANUS, MARCUS Aurelius OLYM-Pius,** a Latin poet, said to have been a native of Carthage, lived under the reigns of Carus and his son Carinus and Numerianus. Nothing more is known of the particulars of his life. He wrote a poem on hunting, 'De Venatione,' which he dedicated to Carinus and Numerianus, and which has come down to us unfinished. He also wrote four eclogues, which have considerable poetical merit, and have been repeatedly published, together with the eclogues of his contemporary Calpurnius. Mainvaul has made a French translation of Nemesianus's eclogues, with copious notes, 1804, 1874. The writings of Nemesianus have been inserted in the collection 'Poete Rei Vaticanum,' with notes, by G. Bonnesperg, Leyden, 1741.

**NEMESIS (Nemias),** a female Greek divinity, who appears to have been regarded as the personification of the righteous anger of the gods. She is represented as an entire woman, in proportion to the fierce and insolent. (Paus., i. 33, § 2.) According to later myth, she was the daughter of Night. (Theog., 223; compare Paus., vii. 5, § 1.) There was a celebrated temple sacred to her at Rhamnus, one of the demi of Attica, about sixty stadia distant from Marathon. In this temple there was a statue of the goddess, made from a block of Parian marble, which the Persians had brought thither to erect as a trophy of their expected victory at Marathon. Pausanias says that this statue was the work of Phidias (i. 33, § 3); but Pliny ascribes it to Agoracritus; and adds that it was preferred by M. Varro to all other statues which existed. (Hist. Nat., xxxvi., 4, § 2.) A fragment, supposed by some to be the head of this statue, was found in the temple of Rhamnus, and was presented to the British Museum in 1820. (Elgin and Phigaleian Marbles, i. p. 120, ii. p. 123.) The inhabitants of Rhamnus considered Nemesis to be the daughter of Oceanus. (Paus., vii. 5, § 1.) The practice of representing the statues of Nemesis with wings was first introduced after the time of Alexander the Great by the inhabitants of Smyrna, who worshipped several goddesses under the same name. (Tibullus, vi.; ii. 35, § 2.) According to a myth preserved by Pausanias, Nemesis was the mother of Helen by Zeus; and Lea, the reputed mother of Helen, was only her nurse (i. 33, § 7); but this myth seems to have been invented in later times to represent the divine vengeance which was inflicted on the Greeks and Trojans through the instrumentality of Helen.

There was a statue of Nemesis in the capitol at Rome; though we learn from Pliny that this goddess had no name in Latina. (Hist. Nat., xxvii. 5; xi. 103.)

**NEMESIS, VICTOR OF EMESA,** in the East, and one of the last of the antient Christian philosophers. Of his life very few particulars are known; and even the time when he lived is uncertain, though this is generally supposed to have been during the reign of Theodosius the Great, towards the end of the fourth century. He seems to have been accused of holding some of Origen's erroneous opinions, but has been defended by Bishop Fell (Ann. p. 26, ed. Oxon. 1671), who however confesses, with regard to the pre-existence of souls, that he 'differed from the commonly received opinion of the church.' But it is as a philosopher and physiologist that Nemesis is best known, and his work 'De Naturâ Hominis' is one of the most accurate treatises of antiquity. Some persons (among whom we may mention Bishop Fell, in Elgin and Phig., i. p. 201; Origen, Philos.) have even supposed that he was acquainted with the circulation of the blood; but in the opinion of Freund (Hist. di Physic, Hailer (Physi. Anh.), and Sprengel (Hist. de la Mésocine), he has no right whatever to be considered as the author of the passage which has given rise to the discussion is certainly remarkable: 'The motion of the pulse,' says he, 'takes its rise from the heart, and chiefly from the left ventricle of it: the artery is with great vehemence dilated and contracted, by a sort of constant happenony and order. While it is dilated, it draws with force the thinner part of the blood from the next veins, the exhalation or vapour of which blood is made the aliment for the vital spirit.' But while it is contracted, it expels it whatever forms the whole body and by secret passages, as the heart throws out whatever is fuliginous through the mouth and nose by expiration' (cap. 24, p. 242, ed. Math.). There is another passage equally curious respecting the bile, which is considered by him says, 'not only for itself, but also for other parts; for it helps digestion, and contributes to the expulsion of the excrements, and therefore it is in a manner one of the nourishing powers; besides, as a vital faculty, it imparts a sort of heat to the body. For these reasons therefore it seems to be made for itself; but because the blood, it seems to be made partly for the sake of the blood' (cap. 28, p. 260, ed. Math.). From this passage Nemesis has been supposed to have known all that Sylvius afterwards discovered to be true of the bile; but his claim in this case is no better than in the former, and indeed Hailer and Sprengel both say that his physiology is not at all more perfect than that of Galen.
But even if we cannot allow Nemesis all the credit that has been claimed for him, still from his general knowledge of anatomy and physiology (which is quite equal to that of the professional men of his time), his acuteness in exposing their errors, and his love for his native land, he has always ranked very high in the list of ancient Christian philosophers. The following opinions in his book, De Diversis Animalibus, the purity and elegance of his style compared with that of his contemporaries, and the genuine piety which shows itself throughout his work, he has always been ranked very high in the list of ancient Christian philosophers.

He calls the substance of the lungs phlegis opaer, 'frothy flesh' (cap. 28, p. 225); 2, he distinguishes the nerves from tendons, and says that the former possess the power of sensation, which the latter do not (cap. 27, p. 251); 3, he says that a woman is pregnant by certain vessels (which he calls 'two veins and two arteries') situated behind the ears, which he says is the reason why 'when those veins that are near the ears and those near the carotid arteries (separandae, 'the parted glands') are wounded, the animal becomes barren,' that it is distributed throughout the whole body, and is deposited at last in the testicles (c. 25, p. 244); 4, he explains the senses, like Aristotle, by an intelligent spirit, which is propagated from the organ of sensation to those of the senses (c. 6, p. 170); 5, he places the sensations in the anterior ventricles of the brain, the intellect in the middle, and the memory in the posterior (c. 13, p. 204); 6, he says that the elements composing the body are in a state of equilibrium mutually to each other, and that the assistance of certain intermediate substances is necessary in order to effect their union (c. 5, pp. 151-156); and 7, that food and medicines only differ inasmuch as the former is similar to the elements of the body, while the latter is only suitable to them (c. 1, p. 49).

The treatise De Natura Hominis, was first edited by Valla in Latin, Lugd. 1538, ap. Seb. Gryphium; the first Greek edition was by Elleboodis, Amsterdam, 1546. 8vo. See also: Christian, a pupil of the latter (afterwards bishop) Fell, Oxon., 1671, 8vo.; the last and most complete is by Matteis, Helo Magd., 1692, 8vo. There is an English translation by George Wither, London, 1635, 12mo., and a German one by Christian (1679, 8vo.).

NEMORIÆDUS, Colonel Hamilton Smith's name for the Goral antelopes. [Antelope, vol. ii., p. 89.]

NEMOSIA, a genus of birds established by Vieillot, and placed by Mr. Swainson in the subfamily Tanagrinæ in his Family Character.

NÉMOURS. [Seine et Marne.]

NÉMOURS, DUKES OF, a title derived from a town of France in the department of Seine et Marne. It was borne first by a branch of the Aragonac family, the last of whom (Vivien, duke of Nemours, 1500-1546), in command of the army of Louis XII., in Italy, against the Spaniards under Gonzalo of Cordova, and was killed at the battle of Cerignola in Apulia, in April, 1503. With him ended the line of Aragonac, which was descended from Carabelli of the house of Borgia, bishop of Evelin, or Erlebo, in 10363. His duchy of Némours was then bestowed by Louis XII. upon Gaston de Foix, son of Mary, the sister of the king. Gaston fell, at twenty-three years of age, in the battle of Ravenna, against the Spaniards and Italians, in 1512. The duchy of Némours was afterwards given by Francis I. to his uncle Philip of Savoy, in 1528, in whose line it continued till 1659; when Henry of Savoy, duke of Nemours, died, the last male descendant of Philip. His widow Mary, daughter of Henry, married (1581) a son of Longueville, and survived him many years. She inherited in 1604, from her brother the Abbé de Longueville, the county of Neuchâtel, in Switzerland, and died in 1679: with her ended the line of Lorraine-Longueville. [Nevuchatell.] The title of duke of Nemours was then borne by the second son of the present king of the French, Louis Philippe.

NEN, RIVER. [Northamptonshire.]

NÉNNIUS, or NINNIUS, a monk of Bangor, in Wales, who lived in the first part of the ninth century, according to several passages of his own work, if these passages are genuine. Vossius (De Historiae Latinæ) says that he lived in the early part of the seventh century, but he assigns no authority for this assertion. Nennius states himself to have been a Briton, and not a Saxon, and a descendant of the noble family of Elfaed, or Elyæus. He wrote a history of Britain, styled 'Eulogium Britanniae,' which, he says at the beginning, he compiled from all he could find; 'from the Roman annals, and the chronicles of the Fathers, as well as from the writings of the Scots and the Angli, and from the traditions of our ancestors.' The history begins with a fabulous mythology of Brutus, grandson of Meesus, who reigned in Britain. The author afterwards relates the arrival of the Picts in North Britain, and of the Scots in Ireland; and after a brief and confused narrative of the Roman conquest and empire in Britain, he adds a singular account of the voyage of St. David to the east, and the foundation of the See of York; and concludes, after some mention, namely, the Saxton invasion and gradual subjugation of the country. It appears that Nennius's MS. was badly mutilated and interpolated by an ignorant transcriber, who signs himself, 'Samuus,' and 'a disciple of the Saxon.' Vossius himself testifies that the latter knowledge must be left out what he thought useless in Nennius's work, and added what he gathered from other writers concerning the towns and wonders of Britain. See end of chap. 64 of Nennius's Beulogia, edited by BERTRAM, and published together with 'Gildas' and 'Richard the Monk of Westminster,' 8vo., Copenhagen, 1757.

NEOLOGY. [Rationalism.]

NEOMERIS, a group of articulated Corallines these disciples to its provocation for a much longer period.

NEONOMORPH, a new genus of birds, established by Mr. Gould on two species from New Zealand; but the specimens wanted the feet and the greater part of the wings.

Generic Character.—Bill longer than the head, compound scales, and an elongated, pointed, barbed, and compounded mandible superior in prominent tendons. Tongue hard, slender, bristle at the apex; angles of the mouth with pendent fleshly caruncles. Wings hard, vein of the tail and middle of the longest species 17½ inches. (Zool. Proc., 1836, where it is announced as one of the birds from which drawings had been taken for Mr. Gould's great work on the Birds of Australia.) We cannot find the genus either in the 1st or 2nd part, and are afraid that the figure is a delusion, and Mr. Gould may obtain further information as to the wings and feet, before his return from New Zealand and Australia.

NEOPHRON. [Vulturidae.]

NEOPHYTE (from neo, which means 'newly planted') is the appellation given to the converts to Christianity who have just received baptism. In the early church the Neophytes, after that solemn ceremony, wore white garments for eight days. They were also subject to a strict discipline and probation, and there were houses at Rome and other places for their reception and instruction.

NEOTHUS, Codman Hamilton Smith's name for the Pygmy Antelopes, the Gazette (Antelope pygmaeum), for instance. [Antelope, vol. ii., p. 89.]

NEOTS, ST. [Huntingdonshire.]

NEOTITIA is a name given to a brown, leafless, scaly plant, belonging to the English province of Krumon, on the south of the plains of the Ganges, and on the east of Sikim and Botan.

NEPAUL, or NEPAL, a country in Asia, must be almost entirely within the range of the Himalaya Mountains, between 25° and 31° N. lat., and 80° and 86° E. long. It extends in length from west to east 450 miles, and from north to south, on an average, 100 miles; its surface is about 43,000 square miles, or about 5600 miles less than that of England. On the north it borders on Tibet, on the west on the English province of Krumon, on the south on the plains of the Ganges, and on the east on Sikim and Bottan.
Surface, Soil, Climate, and Productions.—The Himalaya Mountains are the natural boundary between the elevated table-lands of Central Asia and the extensive lowlands on the banks of the Ganges. The highest points of these mountains are contiguous to the table-lands: towards the plain of the Ganges the Himalayas are also broken off into very large Unit Mountain regions, called Ghosa Cotes, an elevation of 28,000 feet above the sea-level. It lies between 25°30' and 29° lat. and between 82°30' and 83° long. It is situated between the two mountainous regions, one on the east of the Saltbaghar, or White Tower, which rises to 22,261 feet. Further east, between 85° and 86° E. long. and 28° and 30° N. lat., extends the Dhabayrung range, in which the Gossangitan peak rises to 33,944 feet. The Salpu range is between 85° and 87° E. long. on both sides of 28° N. lat.; two of its summits attain more than 24,000 feet. Farther east are the snow-capped summits of the Mirzu range, which have not yet been measured. In the mountains extending west of Dhabalaghiri to the Tri Sula Mountains in Kumon, the mountain sides are yet unexplored. Its limits of country between them are covered snow all the year round, as their surface rises above the line of perpetual congelation. These enormous mountain masses are inhabited by a mixed population, consisting of two main valleys, a circumstance which may be attributed to the small quantity of snow which is annually dissolved. Rain is said to fall on the mountains only in winter, and even then not frequently; and the periodsical rains, produced by the season of summer, are not sufficient to cover the snow-masses: probably they do not ascend more than 8000 feet of perpendicular height. Yet during their prevalence the heated vapours which rise from the rain-drenched surface of Beugel and Bahar dissolve a portion of the snow, and run off the summits as springs in countries where the mountains rise with a more gradual ascent. The narrow valleys are cultivated in their lower parts, where they sink down to about 5000 feet, but the upper parts are only inhabited during the months of rest from snow-masses: and the mountains are likewise the pastures for their cattle and sheep on the lower declivities of the mountains. They have also a small number of chowry-tailed cattle or jacks. In these regions the Tibet musk (Moschus moschiferus, Linn.) is frequent, and also a species of wild sheep, and a kind of wild dog. The antelope Hodgsonii occurs north of the Mirzu range. The few forests contain, in addition to pine-trees and birch, two new species of juniper, which grow to the height of large trees; the boards cut from them are sent for fuel.

The steep descent of this high mountain region lies about 30 miles south of the northern boundary-line of Nepal, and south of the steep descent the elevated region which constitutes the most fertile and cultivated part of Nepal. It varies between 15 and 40 miles in width, and its southern boundary is formed by a range of mountains of moderate height, running at the distance of 15 or 20 miles from the level plains on the Ganges. This range, which, at least in a great part of its extent, is the Lampa Dunga Mountains, may attain in general an elevation of 6000 or 7000 feet above the sea. The surface of the country between the Lampa Dunga Mountains and the Himalaya is between 4000 and 5000 feet above the sea, except in some very elevated parts where the water is more stagnant. The surface is very uneven and broken, numerous hills and ridges of hills rising to 3000 or 4000 feet above their base, and occupying by far the greatest portion of it. In the northern districts these ridges slope north and south, and are connected with the Himalaya; but in the southern they generally extend east and west, parallel to the Lampa Dunga range. The valleys which lie between these ridges are long, but generally not more than one or two miles wide: in a great part of these valleys, the slopes of the ridges slope with an extended nature. Agriculture however is not limited to them; it extends on the declivities of the hills nearly to their summits, when they are not too steep. This country is subject to the periodical rains of the monsoon, which last longer in the south than in the north, and the government of Sir F. W. Hamilton ascribes the fact that some fruits, as peaches and grapes, do not ripen, whilst oranges come to the greatest perfection.

Pine-apples are only grown in some less elevated valleys, and are of excellent quality. In winter the two more elevated summits of the hills are covered with snow, and frost is usually experienced. We know only the mean temperature of the spring. At Kathmandu it is 64° and at Chitlang it is 70° in Fahrenheit. The ground is covered with snow ice, to which grain nearly one-half of the cultivated lands are appropriated, as the unevenness of the ground allows irrigation generally. Besides rice, the inhabitants raise maize, cotton, several kinds of legumes, wheat, barley, sugarcane, and hemp; but this last is little cultivated; the crops are indifferent, and hence the number of cattle and buffaloes is small. The small horses, the Zungus, are noted for their hardiness and activity, but they are not natives, but introduced from Tibet. These, together with their small plows and scythe, are the tools of the inhabitants of the south of the Himalaya Mountains. Sheep are very plentiful; in winter they find pasture on the hills of this country, and in summer they pass to the declivities of the Himalaya Mountains. They are of a large size, give much milk, and have a fine wool. This region also contains several metals in abundance, especially iron, lead, copper, and zinc; the first three are worked rather extensively. Gold is found in the sand of some rivers. The mountainous districts which are not cultivated are covered with large trees, many of which are of great size. They also produce juniper, prickle-palms, birch, and others are also frequently found among them. Some of the trees which are yet unknown furnish excellent wood for furniture.

The Lampa Dunga range does not extend to the plains on the Ganges, but is divided from them by a hilly tract about 15 miles wide. The hills rise to a considerable height near the range, but subside as they approach the low plain, until they entirely disappear. Some of the valleys between these hills are wide and well-cultivated, producing the common grains and plants of Bahar; but most of them are narrow, and these, as well as the hills, are covered with almost uninterrupted forests, consisting principally of oaks, of the Shores robusta, and of different kinds of laurels, bamboo, etc. On the higher parts, and in the more mountainous districts, different species of mimosas; from the juice of the latter great quantities of catechu are made, which goes to Patna and Benares. These woods contain numerous parrots, which are trained and sold for fowling. The well-nourished soil in this part of the country, and the climate, which is nearly uniform, and the nature of the soil, as well as the climate, are very favorable for agriculture. The thermometer rose to 74° at the end of March.

Nepal contains a small portion of the Gangetic plain, which is contiguous to the hilly country. It is a portion of the Tarai, or swamp, but of much a better description than that which lies south of Bootan, and belongs to Bengal. The Nepalese Tarai is not a continuous forest, but the greater part of it is covered with a long coarse grass, which at certain seasons is destroyed by setting fire, and the freed land immediately springs up. The forests cover a considerable part of the plain, though in several places they have been destroyed, and the ground cultivated. The soil produces good tobacco and hemp; the best variety which rise in the hilly tract or in the Lampa Dunga range, and the soil is very fertile, it would sustain a great population, but for its unhealthiness. From the beginning of April to the month of September, the inhabitants are exposed to continual diseases; but still the climate is more healthy than that of the Tarai of Bengal, and the country is more populous. The forests contain numerous wild animals. Tigers are rare, but the elephant and the rhinoceros are common, also bears, leopards, and jackals. Small Game. Most of the rivers which drain Nepal, the Gun Due, and which still the climate is more healthy than that of the Tarai of Bengal, and the country is more populous. The forests contain numerous wild animals. Tigers are rare, but the elephant and the rhinoceros are common, also bears, leopards, and jackals. Small Game. Most of the rivers which drain Nepal, called Gundua or Salagarni, originate, as it is supposed, not far from the banks of the Sampo (Brahmaputra), and the Gangetic rivers. It flows southward and southward, until after entering Nepal, runs through the narrow valley which separates the Dhabalaghiri from Mount Sweetaghar. It soon leaves the high mountains and enters a tolerably wide valley. At Keshig it has become navigable to boats, and it flows through the Lampa Dunga range, where its course is interrupted by some rapids. Soon afterwards it enters the plain of Bahar. The eastern branch, which is called Bori Gun-
due in its upper course, likewise rises on the table-land of Tibet, and in its south-western course surrounds a portion of the Dhasyabung range. Afterwards it runs southwards, and is called Triusl Ganga; it then runs west-south-west, and joins the Ganges beyond, which takes through the Lamsa Danga and Lamsa Danga river. It does not appear that this branch is navigable. The Coosy is also formed by two branches. The western and principal branch rises within the Himalayas Mountains, in the valley which separates the Dhasyabung range from the Lamsa Danga. The first southern branch is the Lamsa Danga river, and then westward under the name of Bhotiya Coosy. Where it turns to the south-east at Dunjia, it becomes navigable, and is called San Coosy. It runs about 100 miles to the east and south-east, until it breaks through the Lamsa Danga, where it forms the famous town of Kirmoon, on the bank of the Sutcliff. The eastern branch of the Coosy is called Arun: it rises within the Himalaya Mountains, but flows first northwards and enters the table-land of Tibet, on which a considerable part of the country is built. It runs a few degrees southwards and enters Nepaul, where it continues to flow in the same direction to its junction with the San Coosy. Its current is too rapid for navigation.

Tours.—Nepaul contains several considerable towns, which owe their origin or prosperity to the circumstance of this country being the principal thoroughfare by which the table-land of Tibet and the plains of the Ganges exchange their productions or supply their wants. Other towns owe their origin to the fertility of the country which surrounds them, and this is particularly the case with the town of Nepaul, which is situated on the summit of the mountain, and which is called Great Nepaul. This town, which is surrounded by mountains rising from 3500 to 4000 feet above it, is only about twenty miles long, and twenty miles wide, and contains large towns, Khatmandu, Lalita Patan, and Bhatgon, and several smaller towns. Khatmandu, the present capital of Nepaul, contains 4000 houses, and, as it is said, a population of 45,000 or 50,000. The great number of temples and stupas, built in the style of Tibet, gives to the city a considerable degree of magnificence. The palace of the Ghoraci princes is an extensive but irregular building. Lalita Patan is said to be still larger, and to contain 24,000 houses. Bhatgon, the third royal residence, is stated to contain 12,000 houses, and to exceed the other two in the magnificence and size of its buildings. It is the school of learning, and its temples contain large libraries in Sanscrit and other languages relating to the Buddhist literature. The plain on which these three towns are built is nearly 4000 feet above the sea-level. Kirkpatrick assigns to it a population of half a million, which Hamilton thinks an exaggeration, but he admits that it is cultivated with great care and is very populous.

Nepaul is on the south-east of Khatmandu, on a high hill, near the banks of the Trisul Ganga, a considerable place, being situated on the most frequented mountain-road which leads to Tibet along an affluent of the Trisul Ganga, and over the mountain-pass of Kheru. In 1792 the Chinese army entered Bhutan by this road. The town of Trusul Ganga, in the valley of the Gundoo Proper, or Salangra, is a large place of trade, being situated on another much frequented road to Tibet. In the western districts of Nepaul is Cheen-chinch, the capital of Jemelah, or Yumila, built in a plain, which is stated to be not inferior in extent to that of Khatmandu, and equally well cultivated and populous; but its elevation above the sea-level is greater, and the sugar-cane does not succeed: rice, maize, and wheat are raised in abundance. The town is very ancient, and has been built. It has a great trade in horses, salt, musk, and chowry-tails.

In the eastern district of Nepaul, the wide and well-cultivated valley of the river San Coosy, are several considerable towns, among which the best-known is Calesi. In the valley of the Arun the principal trading place is Tuming Tar, which has 6000 inhabitants: it is situated in a plain six miles wide and nearly eighteen miles long. In the northern part, there is also a considerable commerce with Tibet.

Inhabitants.—Several tribes inhabit the alpine valleys of Nepaul. According to the opinion of Sir Francis Hamilton, the structure of their body shows that they belong to the Mongol race. The intermixture with Hindus, rather resemble the Malays, who seem to form a link between the Chinese and Hindus. The best-known of these tribes are the Newar, or Newari, who inhabit the plain of Khatmandu. They have attached themselves to one of the sects of Buddhism, but have introduced the division of castes, and their priests do not depend on the lamas of Tibet. The Newar are mostly cultivators of the soil, and exercise many useful arts. They make coarse cotton-cloth, and work very well in iron, copper, and brass, and are particularly ingenious in carpentry. This tribe, as well as some others, still speak their own language, which is quite different from those of the Newar; it consists of the following four dialects: one is the Mountaine language, which is the first spoken by the inhabitants of the Himalayas Mountains, and is the language which is spoken in the region which is occupied by the Bhot, the same nation which inhabits Tibet. Their language seems to be diffused over the greater part of the table-land of Central Asia, and they have a rich literature, which is little known in this country. They are great herders and with commerce. The majority of the population south of the high mountain are either Hindus, or a mixed race, the offspring of the Hindu, and native tribes. They are called Thakpoor, or Thakpoor, and Parthiya Basha, a dialect of the Prakrit. This language continually becomes more and more prevalent, and in some districts it has already destroyed the languages of the native tribes. It is spoken by the reigning family and their tribe, the Ghoras. The last century the Chief of one of these tribes, the Ghorkas, Gourras, or Ghorcas, began to extend his dominions by conquest, and he and his successors were so successful, that in less than half a century he subdued all the countries between Bootan on the east to the river Sutlej on the west, and they carried more than once their arms to Tebs on Lumlo in Tibet. In 1792 their depredations on that side were stopped by the Chinese, who entered Nepaul with an army of 30,000 men, which they advanced as far as Noyacota. After that time they turned their ambitious views towards the plains of the Ganges, and came to a war with the English in 1814. Though the British arms in the beginning were only partially successful, the Ghorkas, by the peace concluded in 1816, were obliged to cede to the British all the countries situated between the Sutlej and the Kali rivers, and to evacuate the territories of the Sikim Raja. Since that time they have been quiet. (Kirkpatrick, op. cit., p. 161.)

Account of the Kingdom of Nepaul: Hodgson's 'Notes on the Languages, Literature, and Religion of the Buddhists in Nepaul and Bhot,' in 'Aristic Researches,' vol. v.

Nepentine C.E. is an excellent plant inhabiting the damper and more arid parts of Asia, and has therefore its place of leaves, large hollow bodies, furnished with a lid, and containing water, secreted from a peculiar glandular apparatus with which they are lined. These bodies, or pitchers, as they are called, appear, when the leaf is tender like expansion of the bark, and are considered to be a form of the apex of the petiole of a leaf, while the lid that closes them is regarded as the blade. Their flowers are brown or greenish, serpentine, arranged in cylindrical racemes, and open by way of spreading and by a very peculiar form of seeds, which look like very small sawdust. They are considered to be closely akin to Aristolochiaceae, and with them have been recently referred by the writer of this to a
Nepenthis distillatoria.

1. a male flower; 2. a female flower; 3. a vertical section of the ripe capsule; 4. a vertical section of a seed very much magnified; 5. the seeds.


When a transparent fragment is put into cold nitric acid it becomes cloudy, and afterwards gelatinizes. Before the blow-pipe the edges are rounded; with borax it slowly melts into a colourless transparent glass.

Occurs on Monte Somma, Vesuvius; and in the lava of Cape di Bore near Rome.

Analysis by Arfwedson, from Vesuvius:—Silica, 44.11; Alumina, 33.73; Soda, 20.46.


Analysis by Kästner:—Silica, 50.50; Alumina, 10.00; Magnesia, 31.00; Oxide of iron, 5.50; Oxide of chromium, 0.03; Water, 2.75.

Nephritis. [Kidneys, Diseases of.] Neprops. [Homarius, vol. xii., p. 774.]

Nepos, Cornelius, a native of Hostilia (now Ostia) on the Po, was a Roman writer and a friend of Cicero, who speaks of Nepos in several of his Letters (Epist. ad Attic., xvi. 5 and 14). Macrobius (Saturn., xi. 1) quotes the second book of Cicero's Epistles to Cornelius Nepos, which have not come down to us. Lactantius mentions Nepos' Letters to Cicero, and Aulus Gellius (xx. 28) speaks of Nepos' "Life of Cicero." Catullus dedicated his poems to him. Nepos however was most intimate with Pomponius Atticus, whom he survived a few years, and whose life he wrote. He also wrote a short notice of Cato the Censor, in P. C., No. 995.

which he says that, at the particular request of T. Pomponius Atticus, he had written a more extended biography of Cato, which however has been lost. According to the old scholiasts, the lives of Atticus and Cato formed part of a larger work of Nepos, De Historia Latina. In a passage in the Life of Dion, in the 'Vita Imperatorum,' attributed to Nepos, the author mentions a work which he had written 'on the Greek historians,' and the grammarian Chrestus (Inst. Grammat., lib. 1.) quotes a sentence in the sixteenth book 'Illustrium Vitrum' of Cornelius Nepos.

The work styled 'Vita Imperatorum,' which is put into most schoolboys' hands, not being mentioned by any antient writer, was for a long time attributed to Aemilius Probus, who lived in the fourth century, and fourth in the whole series as having presented a copy of the book to the emperor Theodosius I., and prefixed to it some verses in which he seems to claim the authorship. Accordingly the earlier editions of the 'Vita Imperatorum,' the first by Janson, i. 14, that of 1560, and the last of 1598, were entitled 'Probus as Excellentim Imperatorum Vitae.' But afterwards the critics began to question the claims of Probus to the authorship of the work. The style and especially the sentiments of the lives certainly appear not suited to a writer of the age of Theodosius, such as the manifest disapprobation of monarchical government, which is exhibited in many passages, among others in the lives of Timoleon (i. 3) and Dion (ix. 5). It is remarkable that the author in his preface addresses the work to Atticus; and yet at the end of the last life, that of Hannibal, when speaking of the uncertainty of the date of that great commander's death, he says that 'Atticus, in his "Annals," had left it written ("scriptum reliquit") that Hannibal died under the consulsip of M. C. Marcellus and Q. F. Laber;' speaking thus of Atticus as a person dead. After the first editions of the 'Vita Imperatorum' were published, Petrus Cornesus found in an old MS. containing the letters of Cicero, the life of Atticus, and the short notice of Cato the Censor above mentioned. These two biographies were published together with the 'Vita Imperatorum,' and the whole under the name of Aemilius Probus, contrary to all evidence, as the author of those two biographies speaks of Atticus as a personal acquaintance. At last Lambini, in the commentary to his edition of the Imperatorum Vitae, 1560, ascertained the claims of Nepos as author of the whole. But several solecisms and barbarisms which occur in the 'Vita' appearing to invalidate Lambini's supposition, as not being likely to occur in a writer of the Augustan age, Barth and some other critics have supposed that Probus abridged the original work, and added it to the Cornelius Nepos of the Augustan age, and that neither Probus nor any writer of the Theodosian age could have written in so pure a Roman style. Tschucke's Proemium to his edition of Nepos, containing the son of Cypselus, de l'Histoire de l'edifice de la Gaule Romaine; and Dunlop, History of Roman Literature, may be consulted as to this controversy. It is worthy of remark that in some of the old MSS. of the 'Vita Imperatorum,' which furnished the text of the earlier editions, there is written at the end, 'Completum est opus Aemili Probi, Cornelii Nepoti,' as if the copyist had been in doubt as to the real author. (Lambini, Commentariorum.)

The 'Vita Imperatorum' are short biographies of twenty Greek commanders, and of two Carthaginian, Hamilcar Barca and Hannibal. From a passage at the end of the last it appears that the author intended to write also the lives of the great Roman commanders, 'that their exploits might be compared with those of the Greek, in order to show which were the greatest.' The work of these Roman commanders, if ever written, have not come down to us, but it seems that some of them at least were written, and it would appear, by Nepos, as Plutarch quotes the authority of Nepos for facts concerning the lives of Marcellus and Lucullus. The 'Vita Imperatorum,' besides the faults in language which are pointed out by Tschucke in his proemium and in the commentary which follows the text, contain many erroneous statements of facts, such as mistaking Miltiades, the son of Cimon, confounding the battle of Mycale with that of the Eurymedon, and others.
NEP

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which are noticed by Tischbeck and Schoell. The author
honestly gives many details of past life and manners,
which is curious, as in the life of Epaminondas.
Sentiments expressed by the author of the 'Vita'
are generous and virtuous, though often puerile and
trifling. The sketch of the character of Alcibiades has
been admired for its grace, ease, and beauty; but the life
of Sophocles, upon which Atticus
is better both for the matter and manner than any
of the rest, and although too panegyric, gives a lively
description of his character. [Atticus.] It has been tra-
slated into English by Sir Matthew Hale, 1677, and by
the Rev. E. Beresford.
The editions of the 'Vita Imperatorum' are numerous:
those of Longinus, 1543; Laminus, 1569; Bosius, 1657;
Van Steveren, 1734, 1773; Tischbeck, 1804; Harles, 1806;
Fischer, 1806; and lastly, Brome, 1827, are reckoned the
best. NEP and FLAVIUS JULIUS CAPRICEIUS MARCIANUS,
the nephews of this patrician Marcellinus, who, in the confusion
into which the affairs of the Western Empire had fallen after the death
of Majorianus, A.D. 460, made himself independent sovereign
of Dalmatia, was acknowledged as such by Leo I., emperor
of the East, A.D. 473, after the death of Olybrius. But a certain Glycerius,
supported by the Burgundian and other barbarian auxil-
aries, who had been driven from Italy, had also been
proclaimed emperor at Ravenna. Nepos sailed from
Constantinople with some troops in 474, and landing at
Ostia, surprised Glycerius in Rome, made him prisoner,
and, having stripped him of his imperial garments, caused him
his death. In the Senate of Salarus, the nephew of Dalmatian,
was considered as a kind of exile. Nepos made peace with
Euric, king of the Visigoths, by ceding to him the provinces
of Gaul which lay west of the Rhone. But soon after, A.D. 475, Orestes,
a native of Pannonia, who had long served in the
army of the Eastern emperor, and marched against Nepos,
was proclaimed emperor at Ravenna. Nepos sailed from
his native city to Zeno, emperor of the East, to assist him in
recovery of Italy. In the year 480 he was murdered at Salona by
two officers of his court, upon which Odoacer, who then ruled
over Italy, was elected bishop of Salona. Nepos is not
mentioned as having been more particularly regarded
in Tarracina during the same period. Nepos is said to have been a good and amiable
but weak man, and unfit for the times. Sidonius Apollin-
sis praiseth him for the excellent choice which he made
of those whom he employed under him.

NEPT'NUS, or NEPTUNNUS, a Roman divinity,
whose attributes are nearly the same as those of the Greek
Poseidon (flsmadовар). Poseidon was the son of Kronus and
Rhea, and the twin brother of Juno and Jupiter; and appears
have been one of the ancient divinities of Greece; although,
according to Herodotus (ii. 50), he was not originally a
Greeck deity, but was imported from Libya. Poseidon
was the god of the ocean, as well as of the sea, rivers,
and lakes. He was the god of horses and cattle
in early times, the god of the sea, which he acquired as his share in the
division of the dominions of his father Kronus. His wife
was Amphitrite, and their son Triton.

Poseidon is said to have produced the horse in his contest
with Athena (Minerva) at the founding of the city of Athens;
by which myth we are to understand, according to
the interpretation of some writers, that the horse was imported
into Greece by sea. But this explanation is far from satisfactory.
It is difficult to give a reason for the connection of Neptune
hydro in the horse; but it is evident
from several passages in the Greek writers that he was regarded
as a god of equestrian divinity, as well as the god of the
sea. (Aristoph., Knights, l. 449.) Poseidon had a magnificent
winter home at the sea at Egion (ll. xiii. 20).

The animals offered to him in sacrifice were usually black
bulls, rams, and boar pigs.

Poseidon was not originally a god of the Doric race. He
was principally worshiped by the Ionians, who were in
majority a seafaring people. In some Doric cities
however which had acquired a love for foreign commerce,
we find that the worship of Poseidon prevailed extensively;
and as for instance, at Tarsus, whence it was carried to Taren-
tum, at Tyre, in Asia, and more particularly on the
Corinthian isthmus, and at Trani, from which place the
worship of this god was transported to the Pontus (Posidon in Italy.
(Müller's Dorians, vol. i. p. 417, 418, tr.)
The etymology of the names Poseidon and Neptunus
is doubtful. Poseidon is written in Doric Greek. Poten-
s (flambran), of which we have another example in the
name of Potidias, written Poteidías (flambran) in the
inscription, now in the British Museum, on those Athe-
nians who fell before this city. The name, according
to some writers, contains the same root, in the first
syllable, as we find in work and werga. Neptunus is
derived by Cicero from nándo (Nat. Deor., ii. 26); and is
Varro from nuptus, because this god covers (obumbrá), the
earth with the sea (De Ling., Lat., iv. 10); but neither of these
derivations has the least show of probability. We may com-
pare the form of the word Neptunus or vritunus, with Partu-
nus, Vertumnus, and the word alumnus; but the
meaning or origin of the root Nept or Nept seems uncertain.
It may perhaps be connected with the same root as is con-
tained in the Greek 

The statues of Neptune resembled in many respects those
of Jupiter; but the figure of the former was more angular,
and there was less of repose and thoughtfulness in the
countenance. The Greek sculptors gave a certain degree
of roughness to the statues of Neptune, which appears
to be preserved in the representation of the god of the ocean.
His hair was usually somewhat in disorder, and the
whorl of his figure was represented as exceedingly powerful
and muscular. Hence the 'chest of Poseidon' (crista
flambrun, ii. 479) is the poetic expression for the carac-
teristic of the deity, which is illustrated by the noble figure
of Neptune from the pediment of the Parthenon in the British
Museum. (British Museum, 'Elgin Marbles,' vol. ii., p. 26.)
His right hand held the trident; and he was usually sur-
rounded by dolphins and other marine objects. (Müller's
Archäologie der Kunst, p. 453.)

NERAC. [Lot et Garonne.]

NERBUDDA. [Hindustan, vol. xii, p. 211.]

NEREIDS (Nepheles), nymphs of the sea, were the daugh-
ters of Nereus, and were either of the number of the nine
sea-nymphs ascribed to Poseidon, or the number of the
twelve or more under the same name. These were also
considered as the nymphs of the river Nereus, and as
having been the dryads of the sea. The most celebrated
of these nereids was Galatea, the wife of Acis, and
represented as a companion of the mermaid Thetis, the
mother of Achilles; Galatea, Dido, &c.

The worship of the Nereids was generally connected,
as might be supposed, with that of Poseidon. Thus they
were worshiped in Corinth, where Poseidon was held in especial
reverence, and in other parts of Greece. (Paus. ii. 1, § 7; compare
ii. 36, § 5; v. 19, § 5.) The Nereids were originally
represented as beautiful nymphs (Nymphae); but
they were afterwards described as beings with green hair,
and with the lower part of their body like that of a fish.
(Plin. Hist. Nat. xii. 23.)

NEREIS (Zool.), Cuvier's name for a genus of Dic-

* Nereis (Sylla) phosphorescent.
NERI, FILIPPO DE', born in 1515, of a noble Florentine family, after studying in his native country, proceeded to Rome in the year 1542, and in the following year went to Lon- 

gerary. Tenacities equal in number are attached to the 

sides of the base of the bend; a little forward are two 

other biarticulated ones, and between them two single, 

the latter have only one pair of jaws in their proboscis (trompe). 

The branches only form small laminae on which a net-work 

of vessels creeps: there are besides two tuberces to each of 

these, from the bases of which two bouches of Biaments, a cirsusus above, and 

one below. 

Lamarck states that the antennae of the Nereids are 

in general short. The eyes, when distinct, he says, are four in 

number. The proboscis is large, open at its extremity, and 

often longer than the body; as when the individuals of Lapey 

mark divides them into six genera, viz.: Lycoria, Nephe 

ly, Glypaea, Hersine, Phylloiden, and Syllis, principally on 

the ground of the presence or absence of jaws and the modifi-

cations of the antennae. To these he adds Sposo. 

Giving in the University of Rome, on the Nereids are widely 

spread, and some of the species are found in most seas. 

Some are found on our own coasts.

NERI, FILIPPO DE', born in 1515, of a noble Floren-

tine family, after studying in his native country, proceeded to 

Rome in the year 1542, and in the following year went to 

Lombar. 

Dias, born in 1515, of a noble Floren- 

tine family, after studying in his native country, proceeded to 

Rome in the year 1542, and in the following year went to Lon- 

grey. Tenacities equal in number are attached to the 

sides of the base of the bend; a little forward are two 

other biarticulated ones, and between them two single, 

the latter have only one pair of jaws in their proboscis (trompe). 

The branches only form small laminae on which a net-work 

of vessels creeps: there are besides two tuberces to each of 

these, from the bases of which two bouches of Biaments, a cirsusus above, and 

one below. 

Lamarck states that the antennae of the Nereids are 

in general short. The eyes, when distinct, he says, are four in 

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love for Poppaea, whom he had seduced from Otho, led him into more serious crimes. Poppaea, who was ambitious of sharing the imperial throne, persuaded him that she could not hope to obtain her object while Agrippina was alive, and accordingly induced Nero to consent to the murder of his mother. The entreaties of Poppaea appear to have been supported by the advice of Burrus and Seneca; and the plan, though not5:210 hesitant to palliate or justify the murder of a mother by her son. (Tac., Ann., xiv. 11; Quint., Inst. Orat., viii. c. 5.)

In the eighth year of his reign Nero lost his best counsellor Burrus, and Seneca had the wisdom to withdraw from the court, where his presence had become disagreeable, and where his enormous wealth was calculated to excite the envy even of the emperor. About the same time Nero divorced Octavia and married Poppaea, and soon after put to death the former on a false accusation of adultery and treason.

In the tenth year of his reign, A.D. 64, Rome was almost destroyed by fire. Of the fourteen districts into which the city was divided, four only remained entire. The fire originally began at that part of the Circus which was contiguous to the Palatine and Corian hills, and raged with the greatest fury for six days and in the night; and after it was thought to have been extinguished, it burst forth again and continued for two days longer. Nero appears to have acted on this occasion with the greatest liberality and kindness; he supplied the sufferers at a moderate price; and the imperial gardens were thrown open to the sufferers, and buildings were erected for their accommodation. But these acts of humanity and benevolence were insufficient to screen him from the popular suspicion. It is generally believed that he had set fire to the city himself, and some even reported that he had ascended the top of a high tower in order to witness the conflagration, where he amused himself with singing the destruction of Troy. From many circumstances it appears improbable that Nero was guilty of this crime. His guilt indeed is expressly asserted by Suetonius and Dion, but Tacitus admits that he was not able to determine the truth of the accusation. In order however to remove the suspicions of the people, Nero spread a report that the Christians were the authors of the fire and numbers of them were put to death. Their execution served as an amusement to the people. Some were covered with skins of wild beasts, and were torn to death by dogs, others were crucified, and several were smeared with pitch and other combustible materials, and burned alive. But the highest crime which Nero committed was against woman, his wife. Some even reported that he had set fire to the city himself, and some even reported that he had ascended the top of a high tower in order to witness the conflagration, where he amused himself with singing the destruction of Troy. From many circumstances it appears improbable that Nero was guilty of this crime. His guilt indeed is expressly asserted by Suetonius and Dion, but Tacitus admits that he was not able to determine the truth of the accusation. In order however to remove the suspicions of the people, Nero spread a report that the Christians were the authors of the fire and numbers of them were put to death. Their execution served as an amusement to the people. Some were covered with skins of wild beasts, and were torn to death by dogs, others were crucified, and several were smeared with pitch and other combustible materials, and burned alive. But the highest crime which Nero committed was against woman, his wife.

The following year, A.D. 65, a powerful conspiracy was formed for the purpose of placing Piso upon the throne, but it was discovered by Nero, and the principal conspirators were put to death. Among others who suffered on this occasion were Lucan and Seneca; but the guilt of the latter is doubtful. In the same year Poppaea died, in consequence of a kick which she received from her husband, while she was in an advanced state of pregnancy.

During the latter part of his reign Nero was principally engaged in theatrical performances, and in contending for the prizes at the public games. He had previously appeared as an actor upon the Roman stage; and he now visited in succession the chief cities of Greece, and received no less than 1800 crowns for his victories in the public Grecian games. On his return to Italy he visited Naples and Rome as a conqueror, and was received with triumphal honours. But while he was engaged in these extravagancies, Vindex, who commanded the legions in Gaul, declared against the emperor; and his example was speedily followed by Galba, who commanded in Spain. The Praetorian cohorts espoused the cause of Galba, and the senate pronounced sentence of death against Nero, who fled from Rome as soon as he heard of the revolt of the Praetorian cohorts. Nero however anticipated the execution of the sentence by requesting one of his attendants to put him to death, after making an ineffectual attempt at suicide. He died, A.D. 68, in the thirty-second year of his age, and the fourteenth of his reign.

It is difficult to form a correct estimate of the character of this emperor. That he was a licentious voluptuary, and that he scrupled at committing no crimes in order to gratify his lust or strengthen his power, is sufficiently proved; but that he was such a monster as Suetonius and Dion have described him, may reasonably admit of doubt. The possession of absolute power at so early an age tended to call forth all the worst passions of human nature, while the example and counsels of his mother Agrippina must have still further tended to deprave his mind. Though he put to death his adoptive brother, his wife, and his mother, his character appears to have been far from sanguinary: his general administration was wise and equitable, and he never equilibrated in his worst actions either the expiatory cruelty of Caligula or the sullen ferocity of Domitian. Nero was a lover of all the arts, and appears to have possessed more taste than any of the emperors, who only resembled him in their profuse expenditure. The Apollo Belvedere is supposed by Thiessni (Epochen der bildenden Kunst unter den Griechen, p. 312), and some other writers, to have been made for this emperor.

His government seems to have been far from unpopular. He was anxious to relieve the people from oppressive taxes, and to protect the provinces from the rapacity of the governors; and it may be mentioned as an instance of his popularity, that there were persons who for many years decked his tomb with spring and summer flowers, and that in consequence of a prevalent rumour that he had escaped from death, several impostors at various times assumed the name of Nero and gave no small trouble to the reigning emperors. (Tac. Ann. v. 53, note.) During the reign of Nero, the Roman empire enjoyed in general a profound state of peace. In the East the Parthians and the Nestorians were at peace; and in the West the Gauls under Boodica, the Gauls under Boadicea, were at peace; and in the West the Gauls were at peace with the Gauls and the Britons, and the Britons were at peace with the Britons and the Thracians.

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Vespasian and Titus, but he incurred the suspicion of Domitian, and was banished by him to Tarentum.

On the assassination of Domitian on the 18th of September, A.D. 96, Nerva succeeded to the sovereign power, chiefly through the influence of Petronius Secundus, commander of the Praetorian cohorts, and of Parthenius, the chamberlain of the palace. The mild and equitable administration of Nerva is acknowledged and praised by all ancient writers, and formed a striking contrast to the singularly rule of his predecessor. He discouraged all informers, recalled the exiles from banishment, relieved the people from some oppressive taxes, and granted toleration to the Christians. Many instances of his clemency and liberality are recorded by his contemporary the younger Pliny; he allowed no senator to be put to death during his reign, and practised the greatest economy in order to relieve the wants of the poorer citizens. But his impartial administration of justice, mingled with little favour from the Praetorian cohorts, who had been allowed by Domitian to indulge in excesses of every kind. Enraged at the loss of their benefactor and favourite, they compelled Nerva to deliver into their hands Parthenius and their own commander Petronius, both of whom they put to death. The excesses of his own guards convinced Nerva that the government of the Roman empire required greater energy both of body and mind than he possessed; and he accordingly adopted Trajan as his successor, and associated him with himself in the government. Nerva died in the beginning of A.D. 98, after a reign of sixteen months and nine days. (Dion, lxviii. 4.)

(Dion; Aurelius Victor; Eutropius; the younger Pliny.)

Nerve and Nervous System. The nerves consist of fine tubular filaments of a white or greyish colour and of a peculiar substance, which are arranged nearly parallel to each other in sheaths of fibrous tissue, and which are more or less directly connected with the brain and spinal chord, from which as a centre they proceed in all directions to be distributed in the substance of nearly all the tissues of the body. The nervous filaments vary in diameter from \( \frac{1}{60} \) to about \( \frac{1}{100} \) of an inch, and each filament extends unbroken from the brain or spinal chord to the part in which it is distributed; the size of the nerves, that is, of the bundles contained in a common sheath or neurilems, depends on the number of filaments enclosed in each. In their course the nerves give off and receive numerous branches; in many parts their ramifications and connections are so numerous as to form a coarse kind of network or plexus; but in all these divisions and reunions there is no branching or communication of the ultimate filaments; the only change is that the filaments pass out of one sheath into another, and the only end that appears to be had in view is the more convenient passage of certain filaments to particular parts.

![Fig. 1](image)

Fig. 1 is a nerve, that is, a bundle containing a number of nervous filaments branching and receiving branches from another adjacent to it. Fig. 2 is a portion of nerve in which the sheath has been removed and the fibres and smaller fasciculi of filaments separated from each other.

The mode of termination of the nerves in the tissues is little distinctly known. In the retina (Eye) the nervous fibres terminate in the small pointed processes by which the internal surface of that nervous expansion is beset; and it is very probable that a similar mode of termination exists in other analogous recipients of special sensation, and in the papils of the skin and mucous membranes; but for the nerves of the other tissues, whether the filaments unite in loops or form networks, or whether they terminate abruptly or gradually merge into the substance of the tissue in which they are placed, is at present undecided, the minuteness and obscurity of the objects having hitherto presented in

On many parts the nerves bear ganglia—small rounded vascular masses of nervous matter, not arranged in fibres, but composed of globules scattered in a network of vessels. Nervous filaments enter into the ganglia on one side, and pass from them on the opposite, but they lose their filamensous character within them and appear to merge into the substance of the general mass.

The nerves are arranged in two systems, the cerebrospinal, or nerves of animal life, and the ganglionic, or great sympathetic system, or nerves of organic life. The nerves of the first system are all immediately connected with the brain and spinal chord, and include all those which are the media of sensation and voluntary motion; the second system contains those nerves which are connected with the brain and spinal chord, or the nerves proceeding from them, only by very small filaments, which bear numerous ganglia in all parts of their course, and which are subservient to the actions of those parts which are engaged in the nutritive functions, and upon which the mind has in general no direct influence.

These two systems of nerves are developed together from almost the lowest animals. Nervous filaments have not yet been seen in the bodies of the polypastigmas, nor in the poriphoras, nor in the polyp-bearing animals, though many of them are sensible to light and other impressions, and their motions indicate the agency of the same means as those which act in the higher animals. In those of the radiata in which distinct nerves are traceable, their distribution is circular, and hence the name of cyclo-neurose, often given to this class. A nervous circle is placed around the mouth, in a single or double cord, bearing minute ganglia, from which filaments radiate to the several divisions of the body, and especially to the tentacula and other moving or sensitive organs.

In the articulata, or diplo-neurose classes, the nervous system assumes the same lengthened form as the animals themselves possess. The same form of a nervous circle placed around the entrance to the digestive cavity is preserved, but the nerves proceeding from it are not all of equal length or similar in distribution as in the radiata, but
one much larger and more distinct than the rest is con-
ceived, as a double cord, extended along the under surface
of the body. The ganglion on the upper part of the nervous
ring around the pharynx constitutes the first trace of a
brain, from which in many genera nerves proceed to the
antennae, the eyes, &c. The cords or columns proceeding
along the body are connected and united to each other.
Each is composed of two distinct tracts, on the lower of which there are ganglia over which the upper tracts pass without communicating with them; the lower ganglionic tracts supply the sensitive, the upper, mot-
ors or motor nerves. As the ganglia and whose nerves are principally distributed to the respira-
tory organs. The first trace of a distinct sympathetic sys-
tem is found in a few nervous filaments passing off from the
cerebrospinal ganglia and distributed around the dorsal artery
and the adjacent vessels.

The size of the ganglia on the longitudinal cord of the
cerebrospinal nerves and of the nerves connecting them and given off
from them is directly proportioned to the volume and com-
plicity of the sensitive or motor organs adjacent to and sup-
ported by those nerves. In those animals which exercise their
motions and have their chief organs of sense about the
head, the supra-cerephal ganglion is very large, as in the
rotifers and the complete insects; while in those in which
the chief nervous influence is required for lateral limbs that
grow out from the body, the supra-cerephal ganglia are
much smaller. To the whole or some particular part of the trunk are developed
proportionally to the organs adjacent to them. In the higher genera of this class the nervous cords are contained
in a cavity separate from that which encloses the other vis-
cera, as they are also much more distinct in all the verte-
brates.

The most striking character in the nervous system of the
preceeding classes is the repetition of similar elements in the
same course or portion of the animal, as in which the
radiata are arranged round a common centre, and in the
articulata are placed longitudinally. Each of these
parts in both receives its nerves from a distinct ganglion,
and therefore possesses a certain extent an independent
nerve system, and an independent life. In higher ani-
mal, in which particular portions of the body contain organs
for special functions to be performed for the benefit of the
whole, this repetition and equal distribution of central ner-
vous systems is lost.

In the mollusca, or cyclo-gangliata, the nervous ceph-
elgal ring is still present, and is often provided with numerous
dergital filaments, whose size bears a direct proportion to the
organs of sense placed near the mouth, and to the activ-
ity of the animal itself. The columns along the abdominal portion of the
animal are usually, like itself, short; and except when active
motions are performed by a foot or other locomotive organ, they
bear but few and very small ganglia.

The nervous system of the mollusca is thus chiefly con-
centrated about the head, and its development is propor-
tioned to that of the organs of sense and motion which are
subservient to nutrition, while the nerves of the body are
but little developed. In the arkidae, and almost in all the preceeding classes, the types of both are united; the cerebral
mass being a more highly developed form of the large
supra-cerephal ganglion of the higher mollusca, while the spinal
idea is a genital ganglion on its sensitive roots, corresponds
with the long ganglion cord of the articulata.

The most essential part of the nervous system of the verte-
brates is the spinal chord, with its continuation in the crani-
un as far as the crura cerebri and cerebelli, and the gan-
nions formed from them, which together constitute that
which is termed the cerebro-spinal axis. This axis is always
enclosed in an osseous sheath placed in the posterior part of the
body, and it is never as in the invertebrata, traversed
by the alimentary canal.

The sympathetic system of nerves distributed to the vis-
cera, which in its simplest form, in the annelida, is composed
of a few filaments from the supra-cerephal ganglion, which
pass along the dorsal artery, preserves in all the classes the
same separation from the sensitive and motor cords, and the
same general distribution about the viscera. It increases in
complexity in the same degree as the cerebro-spinal axis
extends and still increasing development. It forms in the highest of them
numerous and complicated plexuses, with many and many
large ganglia, which follow the course of the principal
blood-vessels, and are distributed to the peculiar influence of
the spinal-axis, sending only small filaments, which mingle with the
spinal and some of the cerebral nerves near their roots.

The part of the nervous system of the vertebrae which
is to be regarded as intermediate between the brain and the
nervous roots, is much in its form depend on the degree in which the hemispheres
of the cerebrum and cerebellum are developed. In fishes
these are usually smaller than the ganglia on the orifice of
the optic nerves; but ascending in the scale, they become
much larger. The increase of these ganglia is a special
feature which is particularly marked in the brain, and the cerebro-spinal system
only in reference to the nerves of motion and sensation
and; referring for the description of the special nerves to the articles Eyn, Eyn, &c., and for the peculiar
nerve system in the sensory and internal organs, to the articles devoted to them. [Heart; Stomach, &c.]

The constant functions of the cerebro-spinal nerves are
to convey impressions, made on the parts in which they are
situated, as well as those in the vicinity of the nervous
organs, or to the spinal chord, where they are perceived
without sensa

The spinal chord, in which all the nerves of the trunk
have their apparent origin, is composed of two lateral halve
bands of nervous tissue, which is generally supplied by appearances of
of their inner surfaces at the median line. The outer por-
tion of the chord is composed of white nervous matter, the
inner of grey, an arrangement the reverse of that of the
brain, in which the cortical substance is grey, and the medi-
ul or white. Each lateral part of the spinal chord is again
obscurely divided by superficial furrows into an
anterior and a posterior column, and a smaller middle
portion between them. All the nerves by which sensitive
impres

There is an important distinction between the motor nerves of the
spinal chord and those of the branches of the brain in
the anterior and posterior roots. Beyond this region,
the anterior and posterior roots unite in a common sheath,
in which their filaments, though they continue distinct, are
undiscriminately mixed; and in this manner they proceed
through the various branches of the spine nearly as
parts of the body, conveying the power of perceiving impressions to all, and the power of motion to the muscles and probably a few other tissues.

Nearly the same mode of origin and distribution, and the same general appearance, are found in the nerves that have their centres in the brain. The filaments of the fiftieth pair [Brain] are almost exactly analogous to the spinal nerves. But in the other cerebral nerves there is less regularity of origin, the nerves of peculiar sensation having no muscular nerves corresponding to them, the seventh nerve, or portio dura, being exclusively motor, without any connected sensitive root, &c. Thus of the nerves proceeding from the brain, some are in all their course sensitive only; others are (except for the occasional connection of some of their branches with branches of the entire motor; other (part of those of the fifth) mixed, that is, containing in a common sheath both sensitive and motor filaments, like all the nerves derived from the spinal chord.

The conveyance of those impressions which produce concussions if the stimulus were applied to all the sensitive filaments which arise from the posterior columns of the spinal chord and their continuations in the brain. To possess this power, their connection with the brain, either directly or through the medium of the spinal chord (which, in this view, may be regarded, merely as a collection of a vast number of the nervous filaments, which have their centre in the brain), must remain uninjured. Hence, when any sensitive nerve is cut through, all the parts to which its filaments are distributed beyond the place of division are rendered incapable of any new impressions (of the most important of these, the injury is inflicted, the more extensive is the destruction of sensibility. When the spinal chord is injured by fracture of the vertebræ, or by disease, or any other means, all the parts whose nerves come out from the portion below that which has been injured cannot be sensitive, or capable of voluntary motion, but for the present we shall consider the sensitive filaments and their functions only. If the posterior roots of a nerve be divided, all the parts supplied by that nerve lose their sensibility; or if a nerve be cut through, and the section is made in such a manner that the facts supplied by branches given off between the point of division and the brain retain their sensibility, while those which are supplied by branches given off in the other part of the nerve more distant from the brain are rendered insensitive, it may be inferred that the nerve filaments prove that the influence of an impression upon the distal or peripheral extremity of a nervous filament can only be conveyed to the brain so as to produce sensation through a continuity of nervous tissue, and only through the very filament itself, and not through any one of the communication of adjacent filaments, that is, if one is injured, another can convey the impression made on it, as in the circulation, by the anastomosis or communication of the blood-vessels, when one is obliterrated, the blood which should travel through the other is, as it were, transmitted and the facts just referred to, and the facts just alluded to, are evidently explain also many of the phenomena of partial paralysis.

If that part of a divided nerve which is still connected with the brain be stimulated, the same sensation is perceived, if the stimulus were applied to all the parts in which the branches that the nerve gives off below the division are distributed. This is shown in the sensation which every one must have felt on striking the inside of the elbow (the funny bone, as it is commonly called); the tingling pain received in the hand is just the same as that which is felt in the hand when a small point is touched in the inner side of the forearm and hand, and in the little and ring fingers, is owing to the filaments of the ulnar nerve (which passes behind the elbow) being distributed to the ulnar side, and to the sensation being always referred to the region of bone to which part of its course it is irritated. It is of course impossible to experiment upon a single nervous filament, but the accuracy with which the imagined seat of sensation produced by irritating a bundle of filaments accords with their distribution is sufficient evidence of the truth of one. The power to the brain that the stimulus is applied, the more extended is the sensation; hence in disease of the spinal chord, pain is often felt in all the parts supplied with nerves coming off from the cervix below the diseased portion, and the pain of divided nerve is far lower all the parts to which its branches are distributed. The same circumstance gives rise to the apparently strange ideas which those who have lost a limb entertain, that they still possess it, till by their sight or other some means they correct the erroneous impressions of their sense of touch. For example, the constant cry of a patient who has just lost his leg, while the stump is being dressed, is that his attendants are squeezing his knee, or cutting his foot, or injuring some other part of the limb, which he cannot believe has been cut off. The reason is, that when those filaments of the nerves in the stump which are destined for the knee are touched, the knee seems to be touched; when those which are going to the foot are injured, the foot appears to suffer. So deceptive are these sensations, that even years after the loss of a limb, for the rest of the time, patients cannot perform any act with the stump which they were accustomed to do with the part they have lost. From the same circumstance of the sameness of sensation, whatever be the connection of a nervous filaments to the brain, arises the well-known feeling of the foot having fallen asleep, when the ischiatric nerve has been pressed upon, and the peculiar character of the pain in many cases of tic doloreux, in which the trunk of a nerve being diseased, the impression is referred to all the parts to which its filaments are distributed.

The laws deduced from these facts, and which are of great importance in the explanation of many diseases of the nervous system, are briefly these. The impressions produced by the functions of the brain are distributed to the different parts of the body in the same manner as though each nerve gave off its filaments to the part where its continuity is destroyed, but it will produce no sensation; though when the spinal chord remains, its passage may be indicated by the phenomena of reflex motion, which will be presently considered. It is chiefly through the nervous system that the sensations are transmitted from one part of the body to another, and which impressions are conducted through all the sensitive nerves to the brain, which are the same, yet the nerves of peculiar sensation, as the optic [Eyes] and the auditory [Ears] are no more capable of receiving the impressions of contact than are the other nerves of a like nature. And we are of perceiving light and sound. If the retina be touched in an operation on the eye (as in the experiments which M. Magendie has often made in operating for cataract), the sensation produced is that of a brilliant flash of light; if a sound be made near the auditory nerve, the sensation produced is that of a loud noise: but in neither case is pain produced, unless the nerves of common sensation, with which parts of the eye and ear are supplied, be irritated at the same time.

Our ideas of the form and size as well as of the hardness of bodies are dependent in some degree on another sense, which is particularly connected with the muscles [Muscles], and is called muscular sensibility. By it we know what degree and extent of muscular force we exert at any given time. Thus if the hand grasps a ball we estimate its size and hardness by the degree of exertion which we feel it necessary to make in order to grasp it; and its hardness by the degree of exertion which is sufficient or insufficient to make an impression on its exterior. In like manner, if the body be larger than the hand can grasp, then (unless we can see it) we estimate its size by the distance the hand moves in keeping the ball in view. Human objects have the whole surface, and its form by the differences of position in which, in thus passing over it, the hand is from time to time placed. It is only the smaller differences in the form of the surfaces of bodies, their smoothness and roughness, and other similar characters, that are perceived alone. Thus when a sensitive part (as the hand) is placed or moved with a certain force on the surface of a body, we know that it is smooth if all the hand receives the same sensation, or rough if the sensation of contact is perceived at points distant from each other. In like manner, from
the extent of surface touched we form our ideas of the sharpness or obtuseness of bodies.

Perceptions of temperature are also the peculiar attributes of certain organs of observation; but they do not admit of our forming very accurate ideas of the heat of bodies, because our sensations depend rather on the rapidity with which heat is abstracted from or added to our bodies, than on the quantity which we lose or receive. Hence we feel the surface of most objects as being either colder or warmer than a slowly-conducting carpet of the same temperature; and when the difference of temperature between the hand or any other part of the body and that which it touches is very great, we lose all power of judging, by the skin, the exact degrees of temperature. The actual temperature of the surface does not, in either case, differ more than five or six degrees from that which is natural to it.

The acuteness of the common sensibility of parts probably depends, cæteris paribus, in the healthy state, on the closeness with which they are separate. We have sensitive nervous filaments. E. H. Weber (Annot. Anatomi. et Phys.) has suggested a mode of estimating the degrees of sensibility of different parts of the surface of the body by touching two adjacent points of it at the same instant, and by the distance at which distance sensations can be discerned as two distinct impressions. This may be effected by putting small pieces of cork on the points of a pair of compasses, and pressing both at the same instant on the part to be examined; the angles which the legs of the compass form will then be easily discerned, in which case they will be touched. The angles which the two impressions are distinguished or confused into one. By this method of examination it is found that the tip of the tongue is the most sensitive of all the surface of the body, being able to distinguish two impressions when the distance between the points on which they are applied is not more than a fourth of an inch, a result which might have been anticipated, from the accuracy with which the tongue perceives and estimates the characters of the different points of foreign bodies. But the method is from the great share which the sense of touch takes in what we confound in the general idea of taste. The balls of the fingers can distinguish double impressions from a fourth to a half of an inch apart; the palms at about half an inch, and other parts of the skin at various different distances they are sensitive nervous filaments.

Applied to the skin at the back of the neck, of the upper arm, the thigh, and some other parts, such double impressions are confounded into one when the points touched are upwards of two inches asunder.

But under certain circumstances the power of modifying or increasing the sensibility of parts, giving rise to varieties of agreeable and painful sensations. Most parts moreover have certain sensations peculiar to themselves; thus no other tissue than the skin is ever the seat of the sensations of touch, without which we feel, and therefore we feel, which conducts heat rapidly, as if it were much colder than a slowly-conducting carpet of the same temperature; and when the difference of temperature between the hand or any other part of the body and that which it touches is very great, we lose all power of judging, by the skin, the exact degrees of temperature. The actual temperature of the surface does not, in either case, differ more than five or six degrees from that which is natural to it.

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be irritated, no motion of its muscles will ensue; but if the left allowance be made with the stimulus, the discharge of the spinal chord from which its nerves come out, the same irritation of the skin will produce convulsive contractions of the muscles. In the first case the impression on the skin, if it pass along the sensitive nervous filaments at all, was lost, and the nerve, without any effort of the will, contracts; and if the light be very strong and sudden, the eyelids involuntarily wince, as they do before any expected injury. In like manner a stimulus applied to the nose excites involuntary sneezing; food, or any other substance in the fauces or pharynx, may be expelled without voluntary act of swallowing, and still more an irritation of the larynx is reflected from the medulla oblongata, and excites in all the respiratory muscles involuntary coughing. In all these cases sensation coexists with the reflection of the impression through the sensory nerve, and imparts this reflex action to the phenomena; on the contrary, in the most marked examples the centripetal impression is not perceived by the brain. Thus the sphincter muscles are constantly maintained in their state of relaxation by the influence of the irritations that pass from the spinal chord; and all the motions occurring in decapitated animals (in which the reflex actions are more remarkable than under any other circumstances) must probably be regarded as unaccompanied by sensation, since exactly similar actions occur in persons suffering from some forms of paralysis, and who can never feel the impression on the skin upon which the involuntary motions instantly follow. In the case of reflection from the optic nerve to the nerves of the iris, and in most of those in which the centripetal nerves pass on directly to the brain, no reflex actions produced with the reflex action; but in all the cases where the centripetal nerves pass to the spinal chord, the reflex actions take place as well, or even more certainly, after the removal of the brain. The spinal chord is essential for a reflex action in the nux, ; that part which is separated from the nervous system and from the cerebro-spinal axis is without effect, as the whole system is a unity, and cannot be subdivided.

Mr. Grainger ('Observations on the Spinal Chord') believes that the impressions which produce reflex actions, as he supposes, the spinal chord, and voluntary motion, are not conveyed by the same sets of nervous fibres. He considers that there meet in the spinal chord four sets of nervous filaments: one passing only to the sensory nerves, and thus merely answering to those which convey sensation; a second, corresponding to these, which pass from the brain along the exterior white matter of the chord, and thence to the muscles, for the conveyance of the influence of the will to them. These two sets are the same as the commonly described sensitive and motor filaments; the others are analogous to these, but are supposed to be subservient only to the reflex actions; they pass to and from the chord with the others, but instead of being combined up with them to the brain along the exterior white matter of the sensory nerves, the reflex, as he supposes, pass along the exterior white matter of the spinal chord itself, to the muscles, as the spinal chord is a different system from the cerebro-spinal axis. The spinal chord is, in fact, the rat in the maze of the nervous system, and can be conceived of as a nodal division of the two great systems which we have described. Hence the spinal chord is capable of any exercise of will? Such an idea is very opposed to opinions which are deemed well founded, but is still far from groundless; the motions are scarcely otherwise explained.

Of the nature of the agent which, passing along the nervous filaments, produces sensation or excites motion, nothing satisfactory is at present known. The imperceptible velocity of its passage naturally suggested the idea of an electric current, and except by the supposition of the motions being similar to those of monsters born without brains, many of which have been known to cry, to take milk, and perform other apparently voluntary acts. Are we from these facts, indicating design in the natural actions of animals, to believe that the spinal chord is capable of an exercise of will? Such an idea is very opposed to opinions which are deemed well founded, but is still far from groundless; the motions are scarcely otherwise explained.

The nerval agent is prepared in the brain and spinal chord, and probably in all parts where there is ganglionic or grey nervous matter, and from them distributed to the nerves. Thus, if the trunk of a mixed nerve be divided, that part which is separated from the nervous system loses that which may be called its stock of excitability, while that which remains attached to the centres retains its excitability as if no injury had been inflicted. For the maintenance of the excitability on which the reflex actions depend, it seems to be necessary; for it is not more rapidly expended after the removal of the brain than when the brain is present. For the maintenance of the excitability for other actions the brain is essential.

If the impression made on the sensitive nerves, and each excitant to motion, be considered to cause a certain consumption of the nervous influence, which it is the office of the nervous centres to replace; and a healthy condition of the nervous system may reasonably be conceived to depend on a due proportion between the waste and the supply. When the former has been excessive, weakness or fatigue of the senses, or of the power of muscular motion, is produced, which a period of sleep or rest from excitement is necessary to remedy. The necessity of such temporary rest is imposed on us by the fatigue at the close of each day, and cannot long be safely resisted; for after the loss of the night's rest, the excitant necessary to produce a certain effect is found to become greater in a rapidly increasing ratio. This occurs every hour of the twenty-four. In short, the brain may be considered as producing the excitability by which the nerves may act during the period of exertion; and hence exertion is not less necessary for health than rest; and many diseases show that exertion either for a considerable time or of being wasted by exertion, accumulates. Hence much of that which passes under the popular name of nervousness—a condition in which a given excitant produces a greater effect than is natural or healthy; and this (although of terms usually applied to material things may give too definite an idea of it) we may reasonably believe to result from an accumulation of nervous influence, as fatigue, or the need of a greater excitement to produce a certain effect, results from its waste.

The influence of exercise of
The system of the great sympathetic nerves is that whose branches are distributed to all the organs of organic life, the heart, lungs, digestive canal and glands, &c., chiefly following the course of the blood-vessels, bearing numerous and large ganglia in all parts of their course, and communicating with the brain and spinal chord or their nerves only by few and small filaments. The parts to which the branches of the sympathetic are distributed have but vague if any sensibility, unless under peculiar circumstances of disease; and the motions which some of them possess are usually quite independent of the mind. Numerous experiments of irritating the ganglia of the sympathetic to see whether any sensitive property of the pain, however, would any results of apparent insensibility be conclusive, because the ganglia might, like part of the brain, be insensible to injury, though fully capable of prevailing the impression of the nerves. It is quite true that the pain of the diseases of internal organs is ample sufficient to prove their sensibility, though it does not determine whether the impression of pain is conveyed through filaments of the sympathetic system or through those few of the cranial system which are involved with the body in the common sheath. In the same manner, in extraordinary cases, the brain and spinal chord have an evident influence on the motions of the organs supplied by the sympathetic nerve, as in the effects of strong passion and other moral affections on the circulation of the digestive fluids, &c. The impressions conveyed from the viscera to the brain and spinal chord may also be reflected either to the voluntary muscles, as in the convulsions of children with disordered digestion, or to the involuntary muscles, as in the increased rapidity of pulse, the sickness, &c. which occur in various diseases.

In the natural state however, the organs chiefly supplied by the sympathetic nerves are entirely independent of the cerebrum, and will maintain their activity for a time even after their removal from the body. Thus the peristaltic motion of the intestines, the contractions and dilatations of the heart of some animals, and some other similar actions, will continue for a considerable time after they are cut off from the body, and the passing to them have been divided. Many other facts prove also that the internal organs are much less dependent on the influence of the sympathetic nerve than the external animal organs are on that of their cerebro-spinal nerves: severe irritation of the sympathetic nerves, such as, if supplied to the cerebro-spinal motor nerves, would excite sudden and violent convulsions of their muscles, gives rise to but weak and slow contractions of the viscera; and these for the same intervals after the application of the stimulus, so that it is often difficult to determine whether the irritation has exerted any influence at all.

The office of the numerous ganglia placed in the course of the sympathetic nerves is perhaps the most obscure point in the whole range of physiology. Some have regarded them as so many brains, by which impressions are received through the branches of which each ganglion is the centre, and from which excitations to motion are sent out; others have believed that they exercise a power of isolation from each other that supply the influence of the mind or of obstructing the constant passage of impressions to and from the brain; and many other functions have been supposed to be performed by them: but for each and all the evidence is altogether unsatisfactory.

The function of a nerve or system of nerves has received its name from the idea that it is of ultimate importance in the phenomena of what is called sympathy, in which one part of the body is affected in consequence of some pecu-
NET

The kingdom is now divided into ten provinces:

<table>
<thead>
<tr>
<th>Province</th>
<th>Area</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Brabant</td>
<td>1,942</td>
<td>366,169</td>
</tr>
<tr>
<td>Guelderland</td>
<td>2,600</td>
<td>336,401</td>
</tr>
<tr>
<td>North Holland</td>
<td>423,873</td>
<td>1,378,575</td>
</tr>
<tr>
<td>South Holland</td>
<td>1,170</td>
<td>509,661</td>
</tr>
<tr>
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<td>640</td>
<td>145,542</td>
</tr>
<tr>
<td>Utrecht</td>
<td>525</td>
<td>140,574</td>
</tr>
<tr>
<td>Friesland</td>
<td>1,927</td>
<td>227,415</td>
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<tr>
<td>Overijssel</td>
<td>1,840</td>
<td>121,662</td>
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<tr>
<td>Groningen</td>
<td>770</td>
<td>172,437</td>
</tr>
<tr>
<td>Drenthe</td>
<td>920</td>
<td>70,146</td>
</tr>
</tbody>
</table>

Total: 11,164, 2,583,271.

That part of Limburg (with 147,527 inhabitants) which is restored to the kingdom of the Netherlands is annexed in perpetuity to that crown, but is constituted as the duchy of Limburg, and is to form a part of the German confederation, in lieu of that part of Luxembourg which the German diet consents to cede to Belgium; but Maastricht and Venlo remain an integral part of the Netherlands.

Face of the Country; Soil; Climate. — The Netherlands are part of the great plain of Northern Europe, and are not separated from Germany on the north-east by any natural boundaries. The provinces about the Schelde and the Waal, being the north-eastern part of them, Zeeland, North and South Holland, Friesland, Groningen, Drenthe, and Overijssel, are indeed most appropriately called the Netherlands, that is, the Lowlands. They form one unbroken tract without a hill or knoll or running water, they lie in part even below the level of the sea, against the inundations of which they are protected partly by immense dikes, and partly by sandhills or dunes, from 80 to 180 feet high, which have been cast up by the wind, and, running parallel with the coast, protect against the element to which they owe their origin. Nothing can be more dreary than this ocean of sand; it is a perfect image of aridity and barrenness; some broom scarcely green, some stunted shrubs growing at intervals in the hollows, where they are protected by sand dunes, are the only objects of the dreary solitude. From the Helder to the mouth of the Maas, a distance of 75 miles, these gloomy and desolate deserts everywhere extend between the cultivated country and the sea. The land thus rescued from the sea, consisting of moor and mud, is transformed by numbers of low dike terraces, which are absolutely necessary to drain it and render it fit for cultivation. The labour is amply rewarded, for the land is extremely fertile and covered with the richest crops.

The lower part of the country is formed of the old Saffier lands, which are low and flat, and have been formed into canals and dikes and ridges with a low dike, which gives a level surface to the land. These canals and dikes are raised to a height of 6 feet above the water. The whole of the country is traversed by a network of canals, roads, and dikes, which extend throughout the whole country. The general operation cannot be performed at once; the marshes are too deep below the surrounding country, two or three canals and dikes are made at different levels, rising by degrees to the upper canal, which is the whole terminus. The girdle of windmills, which announces at a distance the position of the polder, has the appearance of sentinels placed to guard the entrance. All the polders have an extremely rich, slimy soil, which is generally used for pastureage, in some places produces rich crops of grain or corn. The eastern provinces towards Germany contain many meers and marshes, and especially the great series of turf moors which extend from the mouth of the Schelde eastward to the Maas, and then join the great morass called the Peat, on the eastern side of North Brabant, which is 10 leagues long and from 1 to 3 leagues broad.

This marshy country, which is so wholly artificial that it has justly been said 'the Dutch built Holland,' is one of the best cultivated, the most wealthy, and the most populous in Europe; and it would be difficult to find elsewhere a smaller compass, such a number of large and well-built villages, towns, and cities. The atmosphere in these low tracts is for the most part damp, thick, and heavy; fogs and storms are very frequent; but both the heat and the cold are moderate. The climate of Northern Germany. The climate is unhealthy, especially for foreigners. The want of good spring water is very sensibly felt. The climate is more healthy in the eastern provinces, which are rather more
The whole coast, which is washable and indented with considerable bays, large inlets of the sea, and the mouths of great rivers, would measure near 500 miles, or about 1 mile of coast for every 22 square miles. The German Ocean, or North Sea, which borders Belgium and the Netherlands from the Doggerbank to the Doggerbank, a Doggerbank, and the mouth of the Elbe, has produced in the lapse of ages great physical revolutions in the maritime provinces. The most remarkable of these revolutions have been the retreat and encroachment of the sea in the course of the Rhine. The whole country probably once belonged to the ocean, but the oldest accounts that we possess represent the land as more extensive than at present. The Yssel, it appears, ran into an inland lake called Flevio, from which breached and joined to the sea. That lake, with the adjacent continent, has been covered for many centuries by the Zuyder Zee, the only remains of the continent being the islands of Texel, Vlieland, Schelling, and Ameland, which lie in a curved line, convex to two branches, the larger and left arm forming the Waal, the Zuyder Zee. This inland sea, which is enclosed by the islands and the provinces of Holland, Utrecht, Gelderland, Overijssel, and Friesland, resembles a great lake: it is 80 miles long from north to south, and its breadth varies from 20 to 25 miles. On account of its great extent, its great extent, navigation is dangerous in stormy weather for small vessels, which however cross it from South Holland to Friesland rather than go all round the coast. The entrances between the islands being much obstructed by sand-banks, the trade of commerce is carried on by vessels beyond the mouth of the river, and the work of the North Holland Canal. The Lauwer Zee, between Friesland and Groningen, and the Dollart, between Groningen and the German province of East Friesland, were formed by similar invasions of the sea in the thirteenth century, and about the same time the Zuyder Zee, a great salt-water lake, which is called the Wes Bosphorus, was suddenly formed to the south-east of Dort, by the sea bursting through a dam and overwhelming 72 villages, with 100,000 inhabitants. 

The Zuyder Zee is the Rhine, which, coming from Germany, enters the Netherlands at Lobith, where it is 2300 feet broad; but in traversing this country it is divided into three arms, and before it reaches the sea even loses its venerable name. Soon after crossing the frontier it divides into two branches, the larger and left arm forming the Waal, the right or northern arm flows to Arnhem, where it again divides into two branches; one, called the Yssel, flows northwards to the Zuyder Zee; the other runs to Wijk, where it again divides into two streams, the larger, called the Leek, joins the Rhine above Rotterdam, and the smaller reduces to a insignificant river, by passing out to Leyden and the sea. 

The beginning of this century, this branch was lost in the sand, the mouth being completely choked up; in 1594, a branch was commenced to re-open this branch and re-open the inland sea; the work was happily commenced in 1607. The other principal rivers are, the Maas, Maese, or Messe, which comes from Belgium, and joins the Waal at the foot of St. Andrews; and the Schelde, which, likewise coming from Belgium, enters Holland below Antwerp, and divides into two arms, the West and the West Schelde; the West Schelde falls into the ocean at Flushing, and the East Schelde between the Zealand islands of Schouwen and North Beveland. Of the most important is the Scheldt, or the Scheldt Canal. (HOLLAND, NORTH.) The greatest lake is that of Uitlaken, which has now been reserved to drink.

Natural Productions. The horses, which are a large strong breed, well adapted for draught and for heavy cavalry, are about 200,000 in number. The horned cattle are mostly remarkable for their size and beauty, and amount to about a million. Vast numbers of sheep from Denmark and Germany are fattened in the rich pastures of North Holland and East Friesland, and are about 200,000 sheep. The swine are of the German breed, and are most numerous in the provinces next to Germany. The only kind of game is hares, which are rare; wild rabbits however are very numerous among the sand-hills. Domestic poultry is plentiful. There are wild geese and ducks, snipes, woodcocks, and plovers. This is the paradise of storks, being considered a great offensive to kill one. Accordingly they build their nests on the house-tops, and walk about unmolested and unconcerned. Fish is abundant on the coasts and on the rivers; the cod fishery on the Doggerbank and the Greeland whale fishery are very productive. A very important fishery on the coast of the Shetland islands, formerly a chief source of the wealth of the Dutch, has greatly declined. In 1601 there were 1500 vessels employed in the herring fishery; in the years from 1725 to 1807 and 1808 there were 50,000 vessels at the east end of the North Sea. The herring fishery is reserved to nearly 400 tons. 

Sufficient corn for some consumption is not raised; hemp and flax are grown in great abundance.

There are no minerals, except a little bog-iron in Overijssel and Guelderland. 

The province of Gelderland is remarkable for the excellence of its wool. 

Till 1560 the land of the province of Friesland varied from 300 to 1500 acres, but in 1601 it had increased to about 3000 acres. 

The province of Gelderland was the first to declare itself independent of the Dutch government. The province of Zuyder Zee was the last to declare itself independent. The province of Gelderland was the first to declare itself independent of the Dutch government. The province of Zuyder Zee was the last to declare itself independent. The province of Gelderland was the first to declare itself independent of the Dutch government. The province of Zuyder Zee was the last to declare itself independent. The province of Gelderland was the first to declare itself independent of the Dutch government. The province of Zuyder Zee was the last to declare itself independent. The province of Gelderland was the first to declare itself independent of the Dutch government. The province of Zuyder Zee was the last to declare itself independent.
### Ships cleared Inwards.

<table>
<thead>
<tr>
<th>Of what Nation.</th>
<th>Ships</th>
<th>Tons</th>
<th>Ballast</th>
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<td></td>
</tr>
<tr>
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<td>196,609</td>
<td></td>
</tr>
<tr>
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<td>20,566</td>
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</tr>
<tr>
<td>Portuguese</td>
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**Total:** 5787 753,105

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**Total:** 5787 272

### From what Countries.

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<td>The Kleine Oost, Mecklenburg, and Lübeck</td>
<td>444</td>
<td>228</td>
</tr>
<tr>
<td>Hanover</td>
<td>694</td>
<td>276</td>
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### Ships cleared Outwards.—5784 ships, 776,300 tons:

with cargoes—3256 ships, 497,174 tons; the remainder in ballast. Dutch ships, 2728 ships, 327,481 tons; English, 2600 ships, 202,807 tons. North America, 65 ships, 20,598 tons. French, 94 ships, 14,462 tons. Norway, 463 ships, 100,589 tons. Denmark, 224 ships, 13,692 tons. Hanover, 40 ships, 26,230 tons.

Of which there were bound to Great Britain, 1692 ships, 83,769 tons; Russia, 239 ships; Denmark, 104 ships; Sweden and Norway, 1095 ships, 153,554 tons; Cape and East Indies, 135 ships, 72,032 tons.

The inland trade employs 5000 of the vessels called trek-schuyts, and 15,000 boats.

The exports consist, 1st, of colonial produce from the East and West Indies, coffee, sugar, spices, tea, silks, and other articles from China and Japan; and 2nd, chiefly of the productions of the countries among which the export to England annually 18 million pounds of butter and 27 million pounds of cheese; likewise flax, hemp, and corn, where the importation is permitted; tobacco, madder, flower-rods (especially hyacinths and tulips), cattle, and horses: 3rd, the produce of their fisheries, especially herrings, and of their distilleries and manufactories. The chief articles of importation are corn, salt, wine, timber in very large quantities, partly from Norway and partly from Germany, whence it is floated down the Rhine; stone, such as blocks of granite from Norway, for the making of stone for building; marble, and various manufactured goods; besides colonial produce of every kind from the possessions in Asia, Africa, and the West Indies. After the separation of the seven provinces from Spain, the Dutch, in the seventeenth century, held in their hands the greater portion of the carrying trade of Europe, and Holland was a general magazine of the productions of all countries; at that time a list of its exports and imports would have been an encyclopaedia of merchandize; and though this cannot be now said, it is still true in a great degree.

### Manufactures.

The principal manufactures are, linen of the very best quality; woollens, once the most celebrated in the world; silks, and leather. The sugar refineries have increased of late years in a very extraordinary degree. Tobacco-pipes are made in large quantities, both for home consumption and exportation. The distilleries of Geneva, or Hollands, of which there are 200 at Schiedam, have long been celebrated. It is remarkable that the distillers last year petitioned the government for a reduction of the excise-duty, on the ground that their exportation to the United States of North America has greatly diminished in consequence of the establishment of Temperance Societies in that country. Since the revolt of the Belgian provinces in 1830, great efforts have been made to establish manufactures, especially of cotton, in the northern provinces, which appear to have been very successful; so that in a few years the kingdom of the Netherlands, as now constituted, may probably be placed in the rank of manufacturing as well as commercial nations.
Religion.—The established religion is Calvinism, or, as it is called, the Reformed religion; but a general toleration has so long prevailed, that religious sects of almost every kind enjoy the free exercise of their religious forms of worship. The exact proportions at this moment have not been published, but in 1837 it was estimated that there were—Calvinists, 1,700,000; Lutherans, 357,000; Memnonites, 120,000; Remonstrants, or Arminians, 40,000; Anabaptists, 15,000; Roman Catholics, 280,000; and Jews, 50,000. The proportions have probably not much altered since.

Education is very generally diffused throughout the kingdom. Besides the parochial schools, under the protection of the government, and the religious schools are actually employed in educating the people as in England. No person is allowed to set up a school without a licence, which he cannot obtain without a previous examination by a special commission. There are four classes of licences, according to the branches of education to be taught; and no person is permitted to undertake a higher branch than that for which he has passed his examination. For the higher branches there are seminaries, called Royal Schools, where the ancient and modern languages, mathematics, rhetoric, and drawing are taught; of these there are about 60,000, including the ancient language of the schools of Leyden, Utrecht, and Groningen, the first of which was formerly one of the most illustrious in Europe, and can boast a long and splendid list of learned men who have been educated within its walls. There are likewise several particular branches of education, such as military and naval schools.

The Constitution of the kingdom of the Netherlands is contained in the Grand Wet, or fundamental law of the kingdom, and in the laws and ordinances promulgated on the 24th of August, 1815. This constitution resembles in many particulars that of Great Britain. The crown is hereditary in the male line, and, in default of male descendants, in the female line. The executive power is in the hands of the king, whose ministers are responsible. The legislative power is in the king and the states-general, consisting of two chambers: the members of the first chamber are appointed by the king for life; the second chamber is elected by the provinces, assemblages and one-third of it is renewed annually by rotation, but they may be re-elected. All new laws are proposed by the king to the second chamber. The sitting of the second chamber are open to the public; those of the first are not. Each province has its own provincial assembly, and has various important functions. The superintendence of religious worship and charitable institutions, the care of the roads and bridges, and the election of the deputies to the second chamber. This constitution, having been made for the kingdom of the Netherlands, as it was in 1815, is to undergo various alterations and modifications, in consequence of the separation of the northern and southern provinces.

Finance.—This is a subject of extreme importance. It is still under the union with Belgium, and the present state of the country, which was neither at war nor at peace with Belgium, after the revolt of the latter in 1830, till the final separation of the two countries. The whole must be amply discussed in the present session of the states-general. We can only state here that the budget presented by the minister of finance on the 25th of October, 1839, proposes for the ensuing year 1840, 56,378,600 florins, of which 214 millions are for the interest of the national debt, above 14 millions for the army, and 54 millions for the navy. The additional revenues, which for the first time in the history of the kingdom are to be derived from the occupation of the Spanish colonies, amount to 3,826,500 florins, which exceeds the others in extent, population, wealth, and influence. Though Philip III. was obliged to conclude, in 1609, a thirteen years' truce, called the Peace of Antwerp, and the independence of the provinces was recognized, it was not long after that the peace was broken; and the indemnity which was secured till the peace of Munster, at the close of the Thirty Years' War, in 1648. Towards the end of the eighteenth century, they were engaged in war with France and England, and at the beginning of the nineteenth century, in the war of the Spanish succession. By these efforts, while republican jealousy of the attempts of the House of Orange to increase its authority sowed the seeds of party rage and civil war. In 1747 the House of Orange, under the great Duke of Brunswick, IV. obtained the hereditary dignity of stadtholder in all the seven provinces. The Dutch republicans again raised their heads, but the wife of the
statholder William V., who was sister to Frederic William II., king of Prussia, having been insulted by some violent patriots, applied to her brother, who sent a Prussian army of 25,000 men to avenge the indignity she had received, and secure the rights of her husband. The patriots resisted in vain; the rights of the House of Orange were confirmed and enlarged, and a close alliance concluded between the republic and Dutch elements in Britain. The rebellion of the Anti-Orange party, encouraged by the approach of the victorious armies of France, again rose. Pichegru easily conquered Holland, being favoured by the severe winter and by the popular party, and the statholder, with his family, was obliged to fly. To perform any rescue were now organised under the title of the Batavian Republic. A necessary consequence of this change was war with England, which led to the capture of their fleets, the destruction of their trade, and the loss of their colonies, to all which evils would be a far greater than if they had been suffered to continue, and they were also changed three times the constitution of the republic.

In 1806, it was formed by Napoleon into a kingdom, and given to his brother Louis, who studied the welfare of his subjects, but lost the friendship of his brother and the respect of the English. He speedily resigned the crown in favour of his eldest son, a minor, on the 1st of July, 1810. Napoleon however refused to recognise his brother's arrangement, and incorporated the kingdom with the French empire, with which it remained united till 1813. It was not till 1815 that the disasters of the French, rose and expelled them from the country, and recalled the Orange family. The Prince landed from England on the 30th of November, 1813, and was welcomed with a delirium of joy that was irresistible and in some degree, if not wholly, typical of a people. The prince governed the country by the title of Sovereign Prince, till 1815, when the seven northern and the ten southern provinces, after a separation of two hundred years, were again united, by the name of the Kingdom of the Netherlands, a grand and noble conception, destined to accomplish the object which England had so long attempted,—the union of all the provinces in one independent state, calculated to serve as a real barrier against France. This union continued for fifteen years, and the impression in favour of the Dutch, the Belgians, who however were not satisfied with the new state of things. In 1830, encouraged by the Revolution which had expelled Charles X. and his family from France, they revolted from their allegiance, and claimed to become an independent state distinct from England. They speedily have at length attained, not however without the aid of France and England. The independence of Belgium is secured by the treaty concluded in April, 1839, which is guaranteed by Great Britain, France, Austria, Russia, and Prussia.

Literature. — It is not a little remarkable, that of a people whose shores lie opposite our own, and whose national character likewise runs in many respects parallel with ours, who have been animated by a similar spirit of inquiry and investigation with the Dutch, they have produced an Erasmus and a Grotius, a Swammerdam, a Leewenbouk, and a Boerhave; that has done so much for the physical sciences, for medicine, jurisprudence, philology, classical and oriental literature; that can point to a name as great as Jan Berchem, a Bilderdijk; that has done so much for the cultivation of its language; that possesses so many literary societies and institutions, together with others for the encouragement of the fine arts,—ought not to be stigmatised as one inhabited by a dull peddling race of merchants. One circumstance, which, if it has served to diffuse over Europe the labours of its learned men, has also merged their celebrity in that of continental literature generally, has been the practice of employing Latin, a circumstance which has rendered it an acquisition of the Dutch language, and which has been used for the purpose of profiting by their studies or discoveries. Most probably too the universal celebrity of the Dutch scholars throughout the learned world has in no small degree tended to divert attention from and excite a prejudice against the vernacular tongue, that was confounded with literature, as being rude and uncultivated, and unfitted for anything but that of carrying on the intercourse of daily life. Yet so very far is this from being the case, that there is scarcely any modern tongue which either contains within itself more of those qualities which have been generally admired in the French language, or is so free from the vices and deformities which it has been charged with. It has been gradually wrought up and polished; nor have any people paid greater attention to purity of style and elegance of diction than the writers of Holland of late years. It cannot be said that the difficulty of acquiring it has deterred us from attempting to know and understand it. We have found it, as against the remonstrances of those who have been led by the example of the French, that the language possesses a charm which is as complete a satisfaction to the ear as the Dutch, that is, the strongest family resemblance to our own—so much so, that flippant and ignorant travellers have sometimes described it as a sort of bastard English, which is just as correct as it was against the remonstrances of those who have been led by the example of the Dutch. Those who have picked up a few commonplace phrases, and decide that the language in which Vondel wrote or is a barbarous one, would be capable of pronouncing with equal effrontery that the language employed by Milton is altogether rude and unequalled, if they judged of it only as they could make out what was said to them by innkeepers and postillions. It certainly has its defects, but they are those of our own language, which sounds equally ugly to Southern ears, and is condemned as being clogged with consonants and impediments of a similar nature. It is used to the same time possesses far greater homogeneity, and, like the German, the power of combining out of its own elements and roots that class of words which we borrow immediately for our own, a few Dutch words, e.g., Emanuel, immi-

* As one instance at least that even in poetry an entire verse of monosyllables is not necessarily either rugged or poor, we may be allowed to quote a line of De Groot which is perhaps one of the most sonorous and elegiacs in our language—

"Cleaves the dark air, and asks no star but thee!"
who began to mould it into rhythm, if not always into poetry. Contemporary with our Roger Bacon, Jacob van Maerlant (1325-1300), who has been called the Father of the Poets of the Netherlands, may be said to have preceded Chaucer by an entire century, as the latter lived from 1328 to 1400. His works contain the scattered pieces of his 'Spiegel' and 'Spiegel Historaal' (or Historic Mirror). Neither was he the only writer in the language of that age; for Melis Stokes, Jan van Hehn, Thomas van Ghesaert, Heijn van Holland, and others of less note, belong to the same class. In the following time the literary societies known by the name of 'Kamers der Redekrjekers,' or 'Chambers of Rhetoric,' but which, so far from advancing poetry, rather corrupted the language itself; besides which, the party and evil dissensions that prevailed between them and 15th century's universal enmity unfavourable to the progress of literature. It was in the last-mentioned period however that Holland distinguished itself by two most important inventions, that of oil-painting and that of printing. It is true that as regards printing rival claims to those of Mainz and Strauburg in favour of Guttenberg; but if even Koning's work on the subject has not completely established the former, neither are the arguments adduced to the contrary sufficiently valid to invalidate them.

Of the services of Erasmus both to letters and to religious liberty, or of the share which Holland took in the Reformation, it is not our purpose to speak; neither can we bestow any consideration on the productions of the 16th century. If the period furnishes no claim to the title of 'Dutch Muse,' the end of the century was marked by the fame of two great names, Roos and Spieghel, both of whom are entitled celebrity by works of erudition or science. The period we now arrive at may be considered as not merely the dawn but the morning of Dutch literature; and one of the first who contributed towards purifying and refining the Dutch tongue was 'Dick Vondel.' He was born at Amsterdam in 1522, and became private secretary to the States of Holland in 1572. Among other contemporary names of note appear those of Philip van Marrix, Peter Heijn, Spieghel, and Roemer-Visscher. The last two, however, when styled the 'Reef or Brine of Holland,' are now chiefly indebted for celebrity to the fame of their daughters Anna and Maria, who, on account both of their learning and poetical talents, obtained the title of 'Dutch Muses.' By the end of the century a new generation had begun to spring up. 'Dick Vondel' and Roos had surmounted all their predecessors, but suddenly advanced both the language and literature in an extraordinary degree. The era from the commencement of the seventeenth century to 1679, the time of Vondel, is, without a doubt, the most remarkable period of the literature of Holland. The name of Hooft, Cats, Decker, Kamphuysen, Ansel, and Antonides van der Goes. Referring to the respective articles in this 'Cyclopaedia' for some biographical account of the three first-mentioned, we shall briefly mention their merits. It is difficult to decide whether the prose or the poetical compositions of Hooft did most for the refinement of the language. His versification is particularly fluent and melodious, and, as far as his own talent is concerned, his poetry may deserve the preference; yet, by cultivating a prose style, he furnished a model which was then most wanted. Together with Vondel, he may be considered the chief founder of the Dutch tragic theatre. Of Cats it is difficult to comprise an adequate eulogium in a few words; yet, if ever there was a truly national litterary writer—one who has addressed himself to all the best feelings of his countrymen—one whose works are prized by all classes for whom he wrote—that writer is 'Father Cats.' The production of his works exalted the character of his countrymen as to his own fame, for a vein of morality, benevolence, and strong religious principle runs through them all. If Decker's poems are not of the highest class on account of their subjects, they exhibit superior talent, and are much to the refinement of the language. Kamphuysen's productions display great poetical power, both in regard to the ideas and the expression, and his religious pieces breathe intense devotional ardour. Reinier Ansel was greatly admired in his own time and praised for his talents by Vondel himself, and even now his poems may be perused with interest, especially his 'Pest tot Napels' (or Plague at Naples), the horrors of which are described by him with great power.

Before we come to speak of Vondel himself, there are several names which it would be unjust to pass by wholly in silence, although they did comparatively little for the native literature of their country, their reputation being based chiefly upon their Latin productions. Huig de Groot, Daniel Heins, Kasper van Bauere, may seem strangely obscure names, but those of Grotius, Heinsius, and Barlaeus are familiar. The three first-mentioned, though they exerted considerable influence in the world of letters, were not the only names that flourished in the latter part of the century and afterwards, although then greatly advanced in years, visited Italy, chiefly for the purpose of beholding Vasquez. Jan Vos, originally a glazier at Amsterdam, where he was born in 1620, was a man of some ability as a dramatic writer, but his work was afterwards translated into Latin for his 'Aran en Titus' and his 'Medea' are filled with extravagances; yet his versification is masterly, and some of his comic pieces possess strong humour. The two daughters of Roemer-Visscher have already been named, but some few particulars relative to them may be acceptable. Anna, the elder of them, was highly esteemed both by Cats and by Grotius, the latter of whom translated into Latin her poem on his escape from prison. Maria, the younger, and by far the more gifted, was celebrated as a dramatic poetess, and was translated into Latin by Jephta, which, to his taste, was she was less admirable for the excellence of her disposition. She enjoyed the friendship of Hoof, Vondel, Hooft, and other eminent literary men. Her poems have much merit, and are well, but not as well, as the 'Arant, Titus,' and 'Vos's Jeptha,' was greatly extolled by her friends, but appears to have never completed nor published.

Referring for fuller particulars to the article Vondel, we can now merely take a glance at one of whom Holland has justly become so much proud. He was born at Amsterdam in 1596. Vondel displayed itself more forcibly or with greater sublimity than it does in all his best productions. He was one of those superior spirits who give celebrity to their country and to their age; and if Camoens singly has suffered for the greatness of the nation, it is sufficiently sufficient to confer fame upon the land which, if it did not actually give him birth—for he was born at Cologne—was that which reared and cherished him. His tragedies are confessedly his master-pieces, not that they exhibit much of dramatic quality, or action, character, and passion, but rather on account of the lofty strains with which they abound, more especially in the choruses, they being all moulded upon the ancient model. His characters were mostly taken from the "Paradise Lost" by fourteen years. As may be supposed from what has above been said, his odes and lyrical pieces abound in beauties, but he was scarcely inferior as a satirical poet, in which character however he displays far more of the spirit of Juvenal than of Horace. Defects avoided by far inferior writers may be detected in all his productions, but his merits are of first-rate order. His admirers, or, Antonides van der Goes, who belongs not only to Vondel's time, but also to his school, having been his friend and pupil, was gifted with great power of imagination, and his 'Ijstroom' is considered one of the best delectable poetic pieces in the language. Of his two friends Decker and Kamphuysen, the latter was the author of some pieces of literature than a writer by profession, but he wrote several dramatic pieces; the latter was director of the theatre at Amsterdam, and author of 'Inez de Castro' and some other tragic pieces.

Towards the close of the seventeenth century, French literature began to find imitators, and for a short time originality was checked. Vollenhove, another literary friend of Vondel's, author of the sacred poem entitled the 'Kruisroem,' and Vondel himself, and some miscellaneous poems (1686), was still living. He was likewise Lucas Rentges, who had produced an epic poem, of which our own William III. was the subject, and two tragedies, which have been highly extolled by Van Eden. Elizabeth Hoofman, or, according to her marriage,
of the eighteenth century, reserving till afterwards such as have distinguished themselves chiefly in the present
The first names to be mentioned are those of William
and Haren, two brothers of noble family, whose pro-
ductions make an epoch in the poetical literature of
their country, by their originality and spirit, which stamp them as
a quite different class from the school of Feitama. The
first published (first published in 1679, under the title of 'Het
Vaderland'), which is not so much an epic as a cycle of national poems
celebrating the leading events in the history of the
Netherlands. Upon the whole, this production is the chef-d'œuvre of
the Dutch literature of the eighteenth century.

William van Haren also distinguished himself as a
lyric poet; but considerable as his talents were, they were
greatly surpassed by those of his brother. Onno Zweier van
Haren filled, at various times, many high posts in the state,
and received from it a pension, which, however, he
accepted only on condition that he should not take part in any
other employment.

The further contains the following note, referring to
William van Haren's production:

"Like Madame van Winter, Jan Nomnez attempted an epic,
choosing for his hero William I., but with inferior success;
the former gave him the more to wish for, because he
did not have the genius of a writer to match those
words of his own, which, when translated into Dutch,
were, it must be said, translated by van der Heyden, who
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lack of the genius to match those words of his own.
Stijl was a popular writer, more especially in the last-mentioned class of composition. Peter Leonard van de Kasteele, the pensionary of Haarlem, and Van Alphen’s friend, showed considerable poetical talent, both by his original compositions, chiefly on religious and devotional subjects, and his translations from Klopstock and Wieland, besides his version of Burns. As a critic, Feith is entitled to admiration. His ‘Grave’ (which first appeared in 1792, and has been translated into German), is a masterly production, with equal beauties and perhaps fewer defects than Young’s ‘Night Thoughts.’ He also has a collection of ‘Letters,’ and a ‘Poetical ironical critic,’ both highly estimable.

Rhinvis Feith, Helmers, and Bilderdijk, are writers of whom any country might be proud. Both Helmers and Feith are of the same stamp, and as a critic, Feith is entitled to admiration. His ‘Grave’ (which first appeared in 1792, and has been translated into German), is a masterly production, with equal beauties and perhaps fewer defects than Young’s ‘Night Thoughts.’ Bilderdijk has a ‘Poetical ironical critic,’ both highly estimable.

To the literary world, Feith’s ‘Essay on Heroic Poetry,’ &c. place him in a high rank as a prose writer. Helmers, a merchant by profession, affords a striking proof that the pursuits of commerce are not unconnected or incompatible with those of literature and taste; since, apart from their other merits, his poems breathe the most noble and generous sentiments, and are replete with striking ideas and imagery. Of Bilderdijk, one whose varied powers exhibited themselves with equal success upon the most opposite subjects, to attempt to speak here appears almost unjust; since we have no space even to particularise any of his numerous productions, except it be to express regret that so fine a poem as his ‘Ondergang der eersten Wereld’ (the Destruction of the first World) should not have been continued beyond the fifth book. Kinker, who, though born in 1764, is, we believe, yet living, is another excellent poet, and has produced admirable translations of Schiller’s ‘Maid of Orleans’ and ‘Lady Jane Grey.’ In small volumes, Tholusio, Van Hall, De Coste, Van Lempen, all of them, still or till very late living, are writers who do honour to the literature of their country, which has recently lost Van Kampen its historian, one to whose labours we are indebted for much of the information contained in this article, or rather which is here merely pointed at. To those who care for more than the necessarily imperfect outline of the subject here presented to them, we can recommend Van Kampen’s ‘Beknopte Geschiedenis der Letteren,’ &c. as a most useful guide in the study of the literature of the Netherlands; not, does he confine himself to the literature alone, but takes a view of all that his countrymen have achieved in every branch of science; and if territorial extent, and we may add population, can be taken as a standard in such matters, the Netherlands has certainly contributed infinitely more than their share towards the general civilization and enlightenment of Europe.

The table here appended, which might have been made much more complete, will be useful as a chronological map, wherein are supplied, as far as authority for them could be found, those dates which are not mentioned in this brief historical sketch. It is arranged according to the dates of the deaths.

<table>
<thead>
<tr>
<th>Author</th>
<th>Born</th>
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<tr>
<td>Rolgs, Lucas</td>
<td>1645</td>
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<td>Poot, Hubert Cor.</td>
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<td>Van Effen, Justus</td>
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<td>Hoogvliet, Arnold</td>
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<td>Boddart, Peter</td>
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<td>Marce, Jan de</td>
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<td>Feitenra, Sybrand</td>
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<td>Steenwijk, Frans</td>
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<td>Vol. J. Evers</td>
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<tr>
<td>Van Haren, Willem</td>
<td>1710</td>
<td>1779</td>
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NETSCHE, Caspar, was born in 1619, at Heidelberg, from which place his family removed to Arnhem. In this city he was adopted by Dr. Tulleken, a rich physician, who placed him first under Koster, a painter of poultry and dead game, and afterwards under Gherard Terburg, at Deventer. He afterwards set out on his travels, intending to pass some time in Italy, but he got married to his benefactress, and settled in Heidelberg, where he married, and after the birth of his eldest son, in 1661, returned to Holland and settled at the Hague.

C. Netscher was one of the best painters of the Dutch school. The necessity of providing for a numerous family obliged him to devote a considerable portion of his time to portrait-painting, in which he acquired a great reputation, though he had talents for higher departments of the art. His most admired works are his Counterpartia, pictures on which his genius and character are true to nature. He was perfect master of chiaroscuro; his touch is extremely delicate; above all, he is remarkable for his skill in representing linen, white satin, silks, and velvet, the draperies which are cast in large and elegant folds. All the scenery, the furniture, ornaments, Turkey carpets, &c. are painted with inimitable truth and minuteness, but still the do not divert attention from the figures, with which the form of a delightfully harmonious whole. King Charles II. invited him to London, but he declined that honour, preferring the enjoyment of an established reputation in his own country. He died in 1684, aged forty-three years.

Theodore Netscher, his eldest son, who was born in 1660, was his father’s disciple. He went at an early age to Paris, where he remained twenty years, highly esteemed, an acquisitions considerable, and in the year 1682, taking an agreeable likeness. He was employed in the fac simile of portraits of the principal persons of the court, especially the ladies.

In 1716 he came to London as paymaster of the Dutch forces, was introduced to the court by Madame Decker. He remained in England six years, and acquired large sums of money by his painting. After his return to the Hague he lost a considerable sum through some dishonest accounts, and retired in disgust to Heidelberg, where he died in 1712.

Constantine Netscher, the second son of Caspar, born in 1670, closely imitated the style of his father, many of whose portraits he copied in order to form his hand, but he did not
NEU select the study of nature. He attained to a high degree of excellence, and was earnestly solicited by the duke of Parland, whose portrait he had taken, to go with him to England, but he was too infirm to undertake the voyage, being severely afflicted with the gravel, which at last carried him off. In 1728, at the age of fifty-two years.

NEU, or Gymnasium, Breslau, so also they honour many of the students. The true Nettles are various species of the genus Urtica, well known for their stingling properties, which are owing to the presence of an acrid poisonous secretion, that in some Indian species is so dangerous as to cause excruciating pain and even paralysis along one side of the body. There are about six hundred species of Urtica, of which many are talous plants belonging to Labiatae, and wholly inert. The Nettle-trees belong to the genus Cetics, also destitute of stinging properties, but having leaves resembling those of some kinds of Urtica.

Neubeck, Valerius Wilhelmi, born at Arnstein, the Thuringian and Saxo du milieu, and naturalized in France and Jesus, which latter university he took his degree as doctor of medicine, and practised first at Liegnitz, and afterwards at Steinau. His only professional production was his thesis De Nastatia frigida, magni Santitates Præsidio; it was printed in the German language, but has become a literary butcha, chiefly however by his didactic poem entitled Die Gesund- bünnen (or Mineral Springs), a production that has been greatly extolled by Schlegel as the best that had then appeared in the language, enriched with admirable descriptions and images. And one in which the German metamorphosis is treated with the greatest ability. It was first published at Brunswick, in 1795, and in 1798 a splendid folio edition of it appeared at Leipzig. Among his other productions is a translation of Dr. F. Sayer's A Dramatic Sketches of the Life and Death of the Rev. Mr. Green, as a moral contribution, both in prose and poetry, to various literary journals.

Neuburg, sometimes called Neuenburg, is a well-built town in the Bavarian circle of the Upper Danube, agreeably situated on an eminence on the Danube, and opposite to an island which is connected with the town by a bridge. Among the public buildings are a large handsome palace, which contains the great hall, with a collection of antient armour; a college, formerly belonging to the Jesuits; a rich library, a collection of antiquities, a gymnasium, extension rooms, a beautiful and agreeable residence, with a magnificent image of the Virgin, two other churches, an hospital, and an orphan asylum. Neuburg is the seat of a court of appeal, and of the courts of justice of the circle and the town. The inhabitants, who are 6000 in number, have considerable business. In the district, there are several detached portions, amounting together to 1080 square miles, with 96,586 inhabitants, chiefly Roman Catholics. It yielded a net revenue of 136,000 florins. At the beginning of the sixteenth century it was allotted to a separate bishopric, which comes with the bishopric of Neuburg and Sulzbach. The elder line, that of Neuburg, succeeded in 1685 to the electorate of Bavaria, and became extinct in 1742, on which the younger branch of Sulzbach inherited both the principality of Neuburg and the electorate.

Neuchâtel, a town of little importance, of the same name in different parts of Germany.

Neuchâtel. [Vogues.]

Neuchâtel. [Seine Inferieure.]

Neuchâtel (generally written Neuchâtel, but called Neuenburg by the Germans), a canton of Switzerland, situated in the Jura mountains, which here form several parallel narrow ridges running in the direction of north-east to south-west, and separated by elevated longitudinal valleys. The greatest length of the canton is about thirty-one miles, from the Verrières, on the frontiers of France, on the road from Pontarlier to Neufchâtel, to La Paquerie at the north-east extremity of the Val de Ruz, on the road to the Val d'Herens, in the canton of Berne, which is about thirteen miles direct distance. Its area is reckoned at about 250 square miles. It is bounded on the west by the French department of Doubs, the river Doubs forming the boundary along one side of the line; and on the east by the Canton de Vaud, on the east by the lake of Neufchâtel, and on the north by the canton of Bern. The canton is naturally divided into three regions: 1, the 'Vignobles,' being the banks of the lake, the level of which is 1400 feet above the sea; 2, the lower level, or 'Vallon,' or the two fine valleys, Val de Travers and Val de Ruz, which run between two parallel ridges of the Jura, and rise from 2000 to 2400 feet above the sea; 3, the 'Montagnes,' or highlands of the Jura, nearer to France, consisting of some naked and some wooded ridges, with high bleak valleys intervening, which are known by the names of La Chaux de Fond, Locle, and Charvieu, and the eastern and western slopes of the hills are nearly 3000 feet above the sea, and produce little else than grass, but have become the seat of manufacturing industry, especially watchmaking and jewellery. The highest summits in the canton of Neufchâtel rise to about 4000 feet above the sea. Wine, especially from the La Broye, and from the neighbouring valleys, is not striking, the whole country being hilly.

Nearly one half of the surface consists of pasture-land or artificial meadows; one-eighth is arable land, another eighth is forest, and the remainder is wooded, or is planted with vines. The wines of Neufchâtel are the best in Switzerland; the red wine of Cottard is equal to good Burgundy. Three-fifths of the wine are exported. The rearing of cattle and making of cheese constitute two other important branches of industry. The indigenous breeds of cattle are of several kinds; the dairy cattle are 16,000; the sheep, 7500; the goats, 7000; and the hogs, 2200. Honey is made in considerable quantity.

The population of the canton in 1837 amounted to 58,616, of whom 14,534 were natives of other parts of Switzerland, and 3214 strangers from other countries. Neufchâtel is one of the few countries where foreigners enjoy the same protection and security as the natives, subject to the same laws without distinction of country or religion, are governed by the same courts, and purchase all rights of citizens unless they become naturalized, which is easily effected. Of this population about 10,000 are employed in agriculture, 7000 are watchmakers, and between 3000 and 4000 are employed in the cotton and linen manufactories. The women in the Val de Travers are employed in the manufacture of lace. The common trades, such as those of carpenters, masons, bakers, tailors, and shoemakers, are chiefly carried on by foreigners, as the natives prefer employing themselves in watchmaking and other ingenious industry. The religion of the people is the Protestant Calvinist, with the exception of about 2000 Catholics, who live chiefly in the district of Laubin. The language is French, which is spoken by the greater part of the inhabitants, but various patois resembling those of their neighbours of Franche Comté and of the Canton de Vaud.

Neuchâtel, the capital, is built partly on the bank of the lake and partly on two hills divided by the river Seyon, which comes from the Vals de Ruz. It contains 7300 inhabitants, and 6300 inhabitants. On one of the two hills is the castle, which was built in the sixteenth century, and near it the cathedral, which dates from the tenth, and contains the tombs of the ancient counts of Neufchâtel, and of Fareil. The town established the See of Neuchâtel, but a lower town lower town is the hôtel-de-ville, or town-house, which is very handsome, and the hospital for the beggars, the orphan asylum, the hospital founded in 1810 by Pourtales the wealthy merchant, and a fine college, which is completed in 1834, and contains a school of natural history. The lower town, generally speaking, is well built, and has a fine appearance when seen from the lake. Neuchâtel has several elementary schools, a savings'
bank, an insurance company, a bible society, and a missionary society. There is no other town in any importance in the canton, but there are many large villages, and the valleys of the Lœche and La Chaux de Fond contain a great number of scattered habitations occupied by manufacturers.

Neufchâtel is a principality of which the king of Prussia, as representative of the house of Brandenburg, is the sovereign prince, but it has a representative assembly or legislative body consisting of eighty-five members, of whom seventy-five are returned by the electors of the various districts, and ten are elected by the people for three years. All the native or naturalized subjects of Neufchâtel who are twenty years of age, and not paupers or bankrupts, are electors. The candidates for the legislative body must be possessed of landed or house property of the value of 1000 francs. The laws are proposed by the executive, and also by the members of the legislature. The king or his representative gives or refuses his sanction to the bills which have passed the legislature. All the officers in the administration must be natives, except the governor, who is generally a Prussian, and the income of the state is about 10,000 francs annually. The civil list of the prince amounts to 70,000 francs.

The county of Neufchâtel was a fief of the old kingdom of Burgundy, and it had its line of counts until A.D. 1288, when the union of the house of Chalons, from which it came into that of Longueville. Mary duchess of Neufmours, the last of this house, dying in 1707, Frederic L, king of Prussia, claiming the succession as heir of the house of Chalons, and the assembly of the estates of the county receiving him, Bohemia obliged the king of Prussia to surrender Neufchâtel in 1806, and he gave it to General Berthier, but in 1814 the county returned to the allegiance of the house of Brandenburg, and it was at the same time received as a canton into the Swiss confederation, of which it had already been for a long time an ally.

The Lake of Neufchâtel, called also the Lake of Yver- dun, is twenty-five miles in length from north-east to south-west, and about five miles in its greatest breadth; it is bounded on the north by the river Rhône, that forms part of a quite two miles wide near the town of Yverdun, which is at its south-west extremity. Its greatest depth towards the middle is about 400 feet. Its feeders are, 1, the river Orbe from the south-west, which has its source in the Jurà, and crosses at a great part of the Canton de Vaud; 2, the Broie, which comes from the lake of Morat in the canton of Friburg; 3, the Reuse, which flows from the Val de Travers in the canton of Neufchâtel; and 4, the Seyon, which comes from the Val de Rouge, also in the same canton. At the north-east extremity of the lake of Neufchâtel is the town of Bienne, at the north-east extremity, which carries its waters into the neighbouring lake of Bienne, from whence there is an outlet into the river Aar. [Bienne] The lake of Neufchâtel abounds with fish. A steam-boat, the basset-horns power plies on the lake, and there proceeds also by the Thurn to the town of Bienne as far as the town of that name, and occasionally it also ascends by the Broie into the lake of Morat. The country lying between these three lakes is called Seeland, and it is mostly low, and in seasons of great floods part of it is inundated, so as to form only one lake. This was the case in 1816. The basin of the lake of Neufchâtel belongs to the water-system of the Rhine, and is divided from that of the lake of Geneva by the ridge called Jorat, which runs from the north-east to the south-west. It passes into the Canton de Vaud. The level of the lake of Neufchâtel is nearly 200 feet above that of the lake of Geneva. [Lerosey, Diocle, Diocle de la Suisse.]

NEUHAUS (in Bohemian, Gdanzchec Hrudecz) is a well endowed hospital, a circle of Bohemia, 48 miles south-south-east of Prague. It is the chief place of a lordship belonging to Count Czerny, whose palace is a very magnificent edifice. It has one of the finest churches in Bohemia; a gymnasia, which formerly belonged to the Jesuits, and an extensive library of manuscripts, linen, paper, and playing-cards. The population of the town and suburbs amounts to nearly 6000. A great part of the town was destroyed by fire in 1801. Fine topazes are found in the vicinity.

NEUHOFF, THEODOR VON, known at one time as King Theodore, a German adventurer, was born towards the end of the seventeenth century, of the noble family of the counts of La Mark in Westphalia. His father was an officer in the French service, and he himself obtained a French commission in the regiment of Alacen. He afterwards went to Spain, and gained the favour of Cardinal Alberoni, who gave him the rank of colonel in the Spanish service. In Spain he married a lady of honour, whom he deserted, and carried off her fortune; but he was then travailing under different names and titles, Sweden, Holland, Italy, and at last was put in prison for debt at Leghorn. On coming out of prison, he met with several Corsican leaders, among the rest with the canon Orticoni, who had known King Louis in 1792, and proposed to do everything in the cause of the Corsicans, who were then at war with Genoese; he spoke of his high connections and his means of being useful in various ways. The Corsicans were then in the predicament of drowning men catching at straws, and Orticoni believed he at first intended to promise to use his influence to have him named king of Corsica, on condition that he should first bring substantial assistance to his countrymen. Neuhoff upon this sailed to Tunis, where he succeeded in persuading the Bey to lend him ten pieces of cannon, four thousand muskets, with ammunition, shoes, corn, and about ten thousand galeasses. He then went to Ballerina, where he tried to get so much from the Moorish chief, but the facts were authentic. He sailed from Tunis on board an English vessel, with his cargo and a retinue of sixteen persons, including two French officers, and several Turks, and arrived in the island of Sicily, March 1763, in the road of the east coast of Corsica. In the following April the general assembly of Corsicans elected Theodor for their king, and he swore to the draft of a constitution for the new kingdom, which was then proclaimed. [Botta, Storia d'Italia, 4:40] The rest of the story is briefly told under Corsica. After many vicissitudes, Theodor died in London, in December, 1756, and was buried in St. Ann's churchyard, Westminster, where the epitaph on his tombstone records the angelic quality of his life.

NEUILLLY [SAINTE].

NEUKIRCH, BENJAMIN, a German poet of the seventeenth century, was born at Reineke, a village in Silesia, March 27, 1665. His earlier productions partake of the bad taste which stamps that period of German literature, yet although he greatly improved after his literary acquaintance with Canitz at Berlin, and was considered a reformer in poetry during his own day, he possessed few of the requisites that recommend a writer to posterity. However, his books are considered now on account of having contributed to bring a new model of writing into vogue. His poetical translation of Æneas. 'Telemaque' may be classed with the Russian one of Trediakovskij, a work of most unenviable celebrity in the last century, and which his best productions are satires and poetical epistles. He died at Anspach, August 15, 1729, in his fifty-sixth year.

NEUKIRCHEN is a town in the Saxon Voigtland, with a population of 1200 inhabitants, among whom there are many manufacturers of violins, consisting in makers of wooden and 36 of brass wind-instruments, above 30 manufacturers of catgut-strings, and 43 makers of violin bows. Besides many other persons also employed in making pegs, bridges, and similar materials, &c. There has been made in (including the village of Ader) 4243 bows of violin and violoncello strings, 241 dozen of stringed instruments, 177 dozen of violin bows, 109 dozen of violoncello bows, 316 clarinets, 46 oboes, 522 flutes, 64 bassoons. 451 bassoons, 71 basso flutes, 13 bassett-horns, 25 French horns, 172 trumpets, 17 piccan-ndrums, and 241 post and bugle horns.

NEURA/LGIA, a word of modern origin (derived from coopera, a 'serve,' and dýsē, 'pain'), first employed by the French, is used by most modern writers of descriptive entomology as a characteristic symptom of the characteristic symptom is a most acute pain following the course of a nerve in one or more of its ramifications, subject to paroxysms and intermissions, in most cases not attended by either heat, redness, or swelling, and often without any apparent lesion.

Although from the nature and causes of the affection we have every reason to believe that neuralgia must have existed in all ages, still (historically speaking) it may be called
modern disease, as the first distinct description of it that we possess is in that published by André, a surgeon of Ver- 
sailles, in 1756, in his ‘Observ. Prat. sur les Maladies de l’Urètre.’ He however had only met with one species, 
vis. *Neuralgia Faciei*, which he called ‘Tic Douloureux’, a name which, in popular language, it still retains; but 
since his time the same disease (subject only to certain local 
modifications) has been observed in various other parts of 
the body, and under various names. This begins in the orb- 
ital foramen, and extends to the forehead, the upper eye- 
lid, the eyebrow, the caruncula lachrymalis, the inner canthus of 
the eye, and sometimes to the whole of that side of the 
face. 2. *Neuralgia Suborbitalis*, which occupies the supe-
rior maxillary nerve, or second branch of the ethmoidal 
nerve. The pain begins in the infra-orbital foramen, and extends 
to the cheek, the upper lip, the aln nasi, the lower eyelid, 
and the teeth of the upper jaw. 3. *Neuralgia Maxillaris*, which 
la a seat in the inferior maxillary nerve, or third division of 
the plexus, which probably begins in the pterygoid fosse, 
and either extends to the chin and lip, or else to the teeth 
of the lower jaw, the tongue, and the temple. 4. *Neuralgia Iliocruralis*, which occupies the ilico-sciatic nerve, or ex-
ternal division of the musculo-cutaneous branches given off 
y the sciatic nerve. The pain commences at the crista ili, follows 
the spermatic cord, and extends to the scrotum and the testicle. 5. *Neuralgia Femoro-poplitea*, which is seated in the 
groin; commences in the great trochanter, passes to the 
ischial foramen, and then extends along the perineal nerve, 
or external division of the great sciatic, to the outside of the 
foot. 6. *Neuralgia Geniculum* is a species, the pain being felt 
in the outer border of the foot; or in the tibia, as far down 
and extending sometimes up the calf of the leg towards the 
knake. 7. *Neuralgia Cubito-digitalis*, which occupies the ulna-
nerve, given off by the brachial plexus, and derived from 
the fifth, sixth, seventh, and eighth cervical nerves. The pain 
met at the place where it was felt, and followed the course of 
the arm. It is a species the pain being felt along the 
branch of the nerve along the bony part of the forearm, as 
to the termination in the inside of the middle 
joint, and the little figures; sometimes only part of the 
nerve being affected, and the pain is confined to the hu-
merus, or on the opposite side of the limb. 8. *Neuralgia 
Crico-cervicalis*: douleurs ordinairemon chroniques, dont l’iode 
sage varie à l’infini. Several of these have been particularly 
described, and constitute so many additional distinct spe-
cies—1. *Dolore (described by M. Ibar), which is seated in 
the chorda tympani, a portion of the facial nerve, or pos-
terior branch of Meckel’s ganglion; and which is charac-
terised by an acute pain following the course of this 
nerve. 2. *Neuralgia Cricoverticalis* is of rare occurrence: M. Bosqui-
lay has observed two cases of it affecting the external jug-
ular vein, in consequence of wounding the superficial branches 
of the cervical plexus formed by the anterior branches of the 
second, third, and fourth cervical nerves; and M. Joly has 
met with another after the application of leeches to the side 
of the neck. 3. *Neuralgia Trapezius*, which was described by 
Schmidl; *Neuralgia Faciei*, by Good; *Auasia Dolore*, by Young.

The meaning of the term ‘Tic Douloureux’ appears to be rather doubtful. In the ‘Dictionnaire de Trevoux,’ the word ‘tic’ is said to mean, first, a sudden 
spasmodic movement which some persons are subject. These twitches not being accompanied with pain, the name was adopted by Dr. Marquis; but that this name would have been much more appropriate, and be much more suitable for these in neuralgia from every other sort. Dr. Good however considers the 
‘tic’ to be an unnecessary, or sound expressive of the action it imparts. The *Tic Douloureux* is called *Dolor cruceus Faciei*, by Pathgill; *Tie-
red Sensations*. Wesley; *Facial Neuralgia*, by Good; *Auasia Dolore*, by Young.

In the lower part of the thorax. 4. *Neuralgia Cervico-Bra-
chialis* (first noticed by Professor Fuleci of Catania) is seated 
in the internal cutaneous nerve, a branch furnished by the 
brachial plexus. The pain begins at the anterior and inten-
dural part of the shoulder, and descends along the inner side 
of the arm and forearm to the wrist. Sometimes it extends 
only to all the branches of the internal cutaneous nerve, 
but also to those of the external, and then becomes com-
monly known under the name of Neuralgia. 5. *Neuralgia 
Supra-scopularis* was also first described by Dr. Good, and is seated in the suprascapular nerve, another branch given off from the brachial plexus. The pain begins at the inferior angle of the scapula, passes along the posterior surface, and sometimes descends a far as the ra-
idial border of the arm to the thumb and fore-finger. 7. 
*Neuralgia Mammare*, first described by Dr. Good as consist-
ing of ‘sharp, lancinating pains, diverging from a fixed 
point in the breast, and shooting equally down the course 
of the chest, to the elbow; the breast retaining its natural size, 
complexion, and softness.’ 8. and last, *Neuralgia of the facial nerve, or forzi dura of the seventh 
nerve*, the subject of which there is no great room for doubt; for as this is a nerve of motion and not of sensation, it is not easy to understand how from this nerve, which is so generally 
effected by a disease which is in general simply and purely painful. However it is still more difficult to deny the fact; however, no one might have occurred in which the disease has (to the appearance) of the other parts, and general 
wherein the pain has not only followed its rare cases with great exactness, but has also been attended by convulsive 
twitchings of the facial muscles, and even by their pa-
ry. Dr. Elliotton (Cyclop. of Pract. Med., art. ‘Ne-
uralgia’) admits the possibility of the pain being felt in the 
nerve, and a dura being affected; Mr. Cooper (Dict. of Pract. Surjg.) in-
serts this species as the fourth division of the Tic Douloureux; 
and Dr. Good (Study of Med.) says that the nerve in question 
is more frequently the seat of affection than any of the branches of the fifth, which seem to have been described. This *Treat. on Neuralgia, (1839)* is still inclined to doubt 
whether this nerve is capable of being affected with neural-
ria, and rest his opinion partly on a case mentioned by 
Guertet (Hist. de la Soc. Roy. de Méd., t. ii), where the patient, the ramification of the nerve in the 
dura, commencing at the stylo-mastoid foramen, and spreading 
over the cheek. With the hope of effecting a cure, the 
facial nerve was divided at its exit from the cranium, but 
with no mitigation of the sufferings followed; and the only re-
sult of the operation was a certain destruction of the 
motor of the face. This must be admitted to be a very im-
portant fact, but there are others equally strong in direct 
direct contradiction as to the result, especially that most interest-
ing of all the rest, which is related at the very end of the *Treat. on 
Neuralgia*. The contractions of the tongue, which were 
never successively divided, and each operation was attended 
with great relief. Upon the whole, if the possibility of this 
nerve being affected with neuralgia be admitted, the ap-
parent contradiction involved is probably one of those which 
in the present state of science, a perfectly satisfactory ex-
planation cannot be given.

But besides these external forms of neuralgia, the disease 
has sometimes been found to attack various internal organs. 
Thus it was first suggested by Dr. James Young, the writer of 
who says (in vol. v. of the Med. Observ. and Enquiries) 
There are few physicians, I believe, who may not in review-
ing many cases, which have occurred to them, of anomalous 
pains in different parts of the body, so as sometimes to con-
strue them for gouty, bilious or phlegmor the stomach and bowels, perceive some analogy between them and 
the complaint here pointed out, but it is only lately that pathologists have begun to enumerate these anom-
alous pains, and clearly determine the several species of 
neuralgia. Sometimes the central nervous system is 
affected, and we find the terms ‘Cerebralgia’ and 
‘Myelalgia’ employed by some modern French authors to 
designate neuralgia of the brain and of the spinal chord. 
(Racordski, Prétis du Diagnostic, 1837.) Sometimes, in-
stead of the branches of a nerve, the extreme filaments only 
are diseased, as would appear to be the case in many of those
kinds of pain commonly called 'rheumatic' (MM. Jolly and Urquhart, in a recent paper, in the Lancet. To these have been added neuralgia, lumbago, angina pectoris, neuralgia of the arteries, gastralgia, enteralgia, hepatalgia, nephralgia, hysteralgia, neuralgia of the heart, testicle, bladder, urethra, diaphragm, &c. (Raciborski, Rowland, Elliott, &c.) It may be added, however, and in a most emphatic manner, that in all these cases, and it would take up too much space to describe each separately; but they are all more or less characterised by the same peculiar sort of pain, coming on and leaving off suddenly, extremely acute while the paroxysm lasts, and pain on intervals of complete cessation. Of the remote or predisposing causes of neuralgia very little is known, but it has been supposed to attack females more frequently than males, the rich than the poor, those that live in towns rather than the inhabitants of country districts. It is most frequent among those of a nervous temperament, and both infancy and old age are comparatively safe from its attacks. The immediate or exciting causes are very numerous, and sometimes extremely obscure. Among the most common may be mentioned incipient inflammation, nervous affections; and the nature of the exciting cause is often uncertain, even when the symptoms are very pronounced.

The diagnosis of neuralgia is not in general very difficult, for even when it does not follow the course of a nerve, it may commonly be distinguished from every other disease by the peculiar character of the pain, its excessive violence during the paroxysms and the absence of objective symptoms of inflammation. It may sometimes be difficult at first sight to distinguish neuralgia from neuritis, inasmuch as the two diseases resemble each other in some of their most prominent symptoms; but by observing the following diagnostic points, it will be found that the name neuralgia may be safely applied in all parts of the body, the danger of confounding them may be avoided. In neuritis the pain is continual, as is the case in all inflammations; in neuralgia it is never constant, but is subject to paroxysms and intermissions. In neuritis the pain is the organised by the slightest touches; in neuralgia, on the contrary, it is sometimes alleviated by it. To these it may be added that in neuritis we shall find the usual attendants of inflammation, viz., heat, redness, and swelling; while in neuralgia (as noticed above) these are rarely if ever present.

The prognosis will of course depend very much on the nature of the exciting cause of the disease, but still as a general rule it is extremely uncertain. Sometimes, when every remedy has been tried in vain, a cure will be considered as a sufficient and lasting benefit, especially when the disease gives rise to no other serious or dangerous symptoms. The cure of the disease is in the sequel of the dissipation of the nervous system to become dull and lose its powers by a long series of irruptions; yet even this hope cannot be depended on, as there are some cases on record (quoted by Dr. Rowland) where the disease has continued even to the age of eighty-five.

With regard to the treatment of neuralgia, it would appear quite superfluous to say that it must be regulated by the circumstances of each particular case, if it were not for the fact that in a great number of cases it has been treated more blindly and empirically. The first and surest way of curing neuralgia is the use of iron, which was first brought into notice by Mr. Hutchinson of Nottingham ('Cases of Neuralgia, Spasmodic, &c.,' Lond., 1820), and which now occupies a place in public favour that it has been successively held for a longer or shorter period by almost every sort of powerful substance in the 'Pharmacopeia.' Yet every practitioner will readily agree to imagine cases, even if he has not met with them in his own practice, where the effect of iron on the medicine, or the patient, has been entirely useless, and in no disease is there more truth in that adage 'Materia medica est politior efficietur.' When any foreign body presses upon the nerve, or when the pain can be distinctly traced to a canorous tooth, the removal of the source of irritation will commonly afford the cure. Where the disease is due to the mere irritation of the nerve, it should be especially warned against the danger of confounding neuralgia with the tooth-sache, an error that is not unlikely to occur in some cases of pleurisy, and one that has often occasioned the loss of several teeth to the patient, because his pain was attributed from the beginning of the case to inflammation with teeth, and the case appears to be occasioned by the irritation arising from an old cicatrix, it will be expedient to try the effect of applications to the cicatrix itself, viz., either the nitrate of silver, or the actual cautery, or a balsam, or a crude or medicinal anodyne applied to the cicatrix.

And in the same way, when it can be distinctly referred to any other of the exciting causes enumerated above, the removal of that which will probably follow by the disappearance of the disease. But, as already observed, it very frequently happens that the disease cannot be discovered, and in these cases the treatment must necessarily be on a great degree empirical. When the paroxysms are irregular in their duration and recurrence, perhaps the sequelae of some chronic disease may be the best remedy at present known: it may be given in doses of three grains at a time, the dose being increased or diminished according to the weight of treacle. When the pain recurs after certain regular intervals, those medicines which are found to be most efficacious in the treatment of ague may be exhibited with advantage. The use of quina may be given in doses of four or five grains three times a day, though this medicine has sometimes been given in much larger quantities. And Sir Benjamin Brodie mentions one case where the patient took as much as half a drachm daily. ('Local Nervous Diseases,' p. 18.) Potassium arsenious is another excellent medicine which may be employed in this form of the disease; the dose is at the commencement four or five minims three times a day, which may gradually and cautiously be increased to eighteen or twenty. When there is any sign of inflammation present, that the disease may seem rather to deserve the name of neuritis than of neuralgia, it must be treated accordingly, and the usual antiphlogistic remedies, both external and internal, may be
employed. In almost every case of neuralgia it will be advisable to exhibit some preparation of opium, both to relieve the down Ward and to order the patient to lose some sleep at night, at which time the paroxysms are often most aggravated; and especial care must also be taken not only to prevent the constitution caused by this drug, but also to keep up a free evacuation of the bowels, as some of the drugs used for this purpose are known to have a cathartic and purgative medicines alone. A very interesting lecture on a case of neuralgia was delivered at St. Thomas’s Hospital, Nov. 26, 1832, by Dr. Elliotson, which affords an example of the amount to which the doses of several powerful medi - cine may be carried in this disease; sometimes a portion of iron was increased to an ounce every three hours, to which was gradually added fifteen grains of the sulphate of iron. From this treatment the patient received some degree of benefit, but it was only temporary. In the same case, simply by subdividing the mouth by a tongue blade three times a day, eight grains of the hydrochlorate of morphia twice a day, and nine minims of hydrocyanic acid three times a day, to prevent the sickness occasioned by doses of twenty minims of the liquor potassii arsenit. After received requisite to divide the submaxilar nerve, it should patient went out nearly as bad as when he first came in. (The Lancet, No. 484.)

Among local applications may be mentioned the un - guentum varas, emplastrum opii, and empli. belladonna, or a strong solution of belladonna, prepared by Dr. Gibbs (in America), composed of four ounces of the aqua hau roceras and one ounce of sulphuric ether, either alone or with half or one drachm of the extract of belladonna. (British and Foreign Medical Review, vol. i., p. 263.)

Counter-irritants have proved very efficacious, par - ularly the application of a common blister, and, after the cuticle has been removed, the sprinkling over the denuded surface a quarter or half a grain of the acetate or hy drochlorate of morphia. Morax and issues have also been tried with success.

After all other remedies, both internal and external, have failed, the patient’s last resource is the operation either of dividing the nerve or removing the limb; and even the latter, which last will only be resorted to when it depends on some local irritation or resides in the extremity of the nerve, the operation is frequently successful; but when it proceeds from constitutional causes, or exists either in the brain itself or nearer to it than the point where the nerve can be divided, in this case it is manifest that, as no benefit can reasonably be expected from the operation, the experiment ought never to be tried but at the earnest re - quest of the patient. Sometimes the nerve is simply di- vided, but in these cases the pain very often returns as soon as the incision is repaired by the ingrown epithelium, and the nerve is removed, but even this appears only to obtain for the patient rather a longer respite. Latterly, after part of the nerve has been out away, the two ends have been touched either with nitrate of silver or the actual cautery, and in some instances to this plan appears to have sub - ordinate the simple section of the nerve had failed. When the operation of dividing the nerve in facial neuralgia is to be performed, the following are the directions given by Sir Ashley Cooper, in his ‘Surgical Lectures‘:—If it should be thought necessary to divide the submaxilar nerve, it should be done a quarter of an inch below the orbit: the nerve passes out of the foramen half an inch below; so that you are to divide it midway between the foramen and the edge of the orbit: if you divide it lower than this, you will leave some of this nerve still continuing the division, and, after a proper mode to adopt for dividing it is to introduce a sharp - pointed bistoury at the distance from the orbit already stated, and, carrying the point of the instrument close upon the bone, you hook up the nerve on its edge; then press upon it with your finger, and, at the same time, cut and take out the knife, the nerve will be divided. You ought to ask the patient if he feels a numbness of the upper lip, if he should not, your operation will be incomplete. When necessary, the supra-orbital branch is to be divided in a similar manner by introducing the knife under the integuments of the supraorbital ridge; cut through the nerve immediately as it emerges from the supra-orbital foramen, and, following the same line, much of the of the nerve requires division, you need not make any incision through the intubaments, but may perform the operation by placing the knife within the mouth, and directing its point to the mental foramen, where the nerve passes out, and by gliding the knife along the bone at that part, the nerve is sure to be divided. In performing this operation, you may direct your knife by the bicuspidal teeth, the anterior maxillary foramina being just below the jaws of the teeth.

(Cooper’s Dictionary of Practical Surgery; Good’s Study of Medicine; Dr. Elliotson, in the Cyclopaedia of Practical Medicine; Franck, Præcoz Medicus Univer - saepræcozae, t. iv.; M. Jolly, Dictionnaire de Médecine et de Chirurgie Pratique, t. ii.; Böing, in the latter Local Nervous Affections, 8vo., Lond., 1837; and Dr. Row- land’s Treatise on Neuralgia, 8vo., Lond., 1838, which last is probably the most complete and valuable work that has been written on the subject.)

NEURITIS, (N. L., ‘Inflammation of Nerve.)

NEUROPTERA (from νευρος, a nerve, and πτερα, a wing), one of the orders into which the class Insecta is divided. The insects composing this order may be distin - guished by the following characters:—wings, four in number, and

NEUSS, a Prussian town in the government of Düsseldorf, is situated in 51° 18‘ N. lat. and 6° 45‘ E. long., at the commencement of the canal which is to unite the Rhine and the Meuse, and at the influx of the Kruse into the Rhine; was last year made navigable for vessels of moderate burthen, from this town to its junction with the Rhine, over which there is, near this junction, a bridge of boats to Düsseldorf. The Rhine flowed in the thirteenth century close under the walls of the town, from which it is now half a league distant. Neuß is still partly fortified with gates and towers, but the ramp - parts have been converted into public walks and gardens. There are two Roman Catholic churches, of which that dedicated to St. Quiriinus is a fine Gothic edifice, one Pro - testant church, an orphan house, a chateau, an orphan asylum, an hospital, and a handsome town-hall. The in - habitants now amount to 8000, most of whom are Roman Catholics, there being only 150 Lutherans, 100 Calvinists, and 50 Jews. Neuß is a flourishing town, and has manu - factures of woollen, calico, flax, hemp, cotton, and woolens, and of cotton-yarn, worsted, handkerchiefs, tape, and hats; like - wise a manufactory of cotton-cards, one of starch, an establishment for dyeing Turkish-red, and a quill and pen manufactory, in which 200,000 quills are clarified every week. There are also vinegar-makers, soap-boilers, four oil - mills, and one fulling-mill. The inhabitants of the town and circle are also extensively engaged in agriculture and breeding of cattle, and have a great trade in corn, mill - stones, stone for building, square timber, planks, slates, and coal.

The town is said to have been built by Drusus, brother of Tiberius, who had thrown a bridge over the Rhine; one of the gates of the town is still called Drusus gate. In the Rhine, joined to the town of Neuß, is a stone bridge and is celebrated for its brave resistance, in 1475, to Charles the Bold, duke of Burgundy, who besieged it for nine months. To reward the townsmen, many important privileges were granted to the city by the emperor Freder - ick II., who came to its relief. The, town of Neuß, at Frederick stands in the market-place. It was here that the allied armies passed the Rhine, on their march to Paris, in 1512.

NEUSTADT, commonly called Wiener- or Wienerisch - Neustadt, in 47° 50‘ N. lat. and 16° 15‘ E. long., is situated on the extensive plain of the Steinfeld, on the navigable canal to Vienna, and at the junction of the Kehrbach
and the Little Fisch, not far from the frontiers of Hungary. Next to Vienna, it is the most considerable town in Austria. The Universitätsstadt, 10,000 inhabitants, besides the military and the students of the academy. The town is pretty regularly built, nearly in the form of a parallelogram, with four gates; it is surrounded with a wall, 12 feet in breadth and 7 high, and is divided into four quarters, and has in the centre a large and handsome square, surrounded with arcades. The principal building is the antient arched palace, built in 1156 by Leopold the Virtuous, and assigned in 1762 by the emperor, Francis. Together with the imperial military academy, it is a strong square edifice with a tower, and surrounded with ditches, which however are now dry, and have been converted into kitchen-gardens and plantations of fruit-trees. This academy has 36 professors and 500 pupils. The imperial academy, containing, among other monuments, that of the emperor Maximilian I., and some good paintings on glass of the fifteenth century. The academy has a good library, a collection of philosophical instruments, a school for drawing, an artillery-hall, containing a complete model of a fortress, a hall for gymnastic exercises, a manege, a winter bath, a refectory, with the portraits of distinguished Austrian generals, and a walled garden, 1400 yards long and 1200 broad, which was formerly a park, and is still so called. The imperial academy, founded by Leopold the First, in the place where a bishop's see is, is a large stone edifice of the thirteenth century, with two lofty towers; it contains some good paintings, and, among other grave-stones, those of counts Ziny and Frangipani, who were beheaded for high treason. The other other buildings have been converted into warehouses. Of the other buildings, the chief are, a Cisterian abbey, which has a library of 20,000 volumes and a beautiful collection of minerals and shells; a military hospital, a civil hospital, and a gymnasmum. There are manufactories of silk in Vienna, linen, corduroy, and various other manufactures. Newwied, being so advantageously situated on the high road from Vienna to Styria, and likewise an entrepôt for the commerce between Hungary and Italy, carries on a very brisk trade by water with Vienna, and by land with the Germanic states. Two thirds of the inhabitants of the place was built by Leopold the Virtuous between 1192 and 1194, and on account of its fidelity to its prince, which was particularly manifested under Frederic the Valiant in 1236, and Frederic IV., 1455, and in the siege by the Turks in 1229, has received the honourable appellation of 'Always Faithful.'

This flourishing town was nearly destroyed by a dreadful conflagration on the 5th September, 1834, which in a few hours burnt down all the buildings and several churches, and the calamity was fortunately followed by a mild autumn and winter, so that the rebuilding of the houses was not stopped. The emperor Francis, besides a very large sum from his private purse, assigned 100,000 florins from the public treasury, and orders of the town were thoroughly and abundantly, and immense contributions flowed in, not only from every part of the Austrian empire, but from foreign countries, both in money and clothing, provisions, &c, which, added to the sums paid by the insurance officers, enabled the inhabitants entirely to rebuild the town and to resume their usual occupations.

NEUTER. [GENDER.] Neutral Salts. Formerly this term included such salts as did not obviously contain an excess either of acid or of base. They were divided into vegetable and metallic. Such for example as had an alkaline or earthy base, and reddened litmus paper, were termed super or acidulius salts, and they generally had an acid taste; such a compound is that called cream of tartar, now termed bichromate of potash; on the other hand, potash and soda, when combined with the smaller portion of carbonic acid which they are capable of uniting with, are called subcarbonates, because they render turner paper of a yellowish-brown colour, thus evincing an alkaline property.

As at present the term neutral salt includes such compounds, whatever may be their action on coloured tests, and whatever may be their taste, as are composed of one equivalent of each of their constituents; thus the subcarbonates of potash and soda and other termes carbonates, not withstanding their alkalick reaction, are because they consist of one equivalent of acid and one of base.

Neutralization is a term generally applied to the decomposition of the alkaline carbonates, as of potash and soda, by the action of acids. They are converted into other than the carbonic, and which of course expels it from the alkaline bases with effervescence. The process of neutralization by means of sulphuric acid is extensively adopted in the process of alumininetry, or of determining the quantity of real trisulphate, which samples of especially of potash or soda contain, by means of the quantity of sulphuric acid required to render them neutral to test-papers.

Newwied, situated in 50° 35' N. lat. and 7° 30' E. long. on the left bank of Rhine, was formerly the capital of the little principality of All-wied, which was retained by the house of Zriny, a branch of the ancient house of Austria, and was destroyed by the Emperor Leopold in 1696, when it was mediatised, and assigned to Nassau. In 1814 it was transferred to Prussia, to which the sovereignty now belongs; it is in the province of the Rhine and government of Coblenz. Newwied is a very regular well-built town with broad streets, and houses all of equal height. It contains 5500 inhabitants, consisting of Roman Catholics, Lutherans, Calvinists, Anabaptists, Moravians, Mennonites, Quakers, and Jews, and among the Protestants a few (about 40) who call themselves 'The Inspired,' and believe in the existence of a secret society, to be destroyed by God, and having their own places of worship. It is the capital of the circle and of the principality, and the residence of the Prince Augustus of Wied-Newwied, who has a very fine palace with extensive gardens. The palace contains a good library, and an academy for music. The inhabitants have been converted into a board-school for boys and another for girls; five Protestant churches, of which that of the Moravians and that of the Calvinists are the most worthy of notice, a synagoge, and many manufactories. It is the seat of the government of the principality and of many public offices both of the king and the prince. The inhabitants are very active and industrious, and have manufactories of silk, cotton, wool, lace, thread, hats, carpets, leather, tobacco, stockings, &c, besides the manufactures of the distilleries, of tin, beer, stoves, and also a manufactory of musical clocks. There are breweries, distilleries, vilier manufactories, and many others. The inhabitants carry on a profitable trade in these own manufactories, and in the products of the country. They are a polite and family and polite people. A league from the town and close to the Rhine are the ruins of the antient castle of Fredericks-stein, called by the watermen the Devil's Castle. (Stein, Hassel, and Müller's Handbuch, 1836.)

NEVADA. River. [Petersburg.] Neva'da, La Sierra (the Snowy Chain), is a chain of mountains in the kingdom of Granada, in Spain, running due east and west, between 37° 17' and 37° 13' N. lat., and between 3° and 4° W. long. Its length is about 50 miles, and it is the highest of the ranges of the Sierra Nevada, being the greatest altitude in the centre, in the peaks of Malahacas and Picacho de Veleta, the former being 11,658 feet and the latter 11,362 feet above the level of the Mediterranean. Maladeta, the highest peak in the Pyrenees, being 11,424 feet above the sea, is only 47 feet below the Nevada. The mountains of the Sierra Nevada, the snowiest in Europe, attain great height, being the Neva'da and its branches, second only to the Alps in altitude. This chain is perpetually covered with snow above the line of 9500 feet. At its base, about 25 miles north-west of the Picacho de Veleta, lies the city of Granada.

The geological composition of the Sierra Nevada has not yet been thoroughly investigated. According to Colonel Silverton (Gond. Proceedings, 1830), this chain consists of a central axis of gneiss and mica schist, with successively overlying zones, on each flank, of transition and secondary rocks, which on the south and along the shores of the Mediterranean are here and there covered with patches of tertiary uraneous deposits, containing subappendise shales.
Telford executed some important harbour-works at Aberdeen and Dundee; but his most striking performance of this class is the St. Katherine Docks, London. Owing to the very limited space which could be obtained, it was necessary to construct these docks of irregular forms, and to adopt unusual arrangements respecting the warehouses; and these arrangements, combined with the admirable machinery employed, have reduced the time requisite for building the docks. In Breton, from 130 feet long and 45 feet wide, with three pair of gates, so that either one very large or two smaller vessels may pass the locks. Steam-wind and steam-engines are provided, capable of filling the lock in a few minutes, and taking it out from the middle of the river, so that vessels are enabled to pass in and out of the docks with great rapidity so long as there is a sufficient depth of water to receive them outside the lock. The cast-iron turn-bridge over this lock is an excellent specimen of that kind of machinery, being easily worked by two persons at each end, although it supports a carriage-way 24 feet wide. These docks were constructed much more quickly than is usual for works of such magnitude, and more quickly than the engineer could fully approve, although he admitted the urgency of the case as a justification of a course against which he could not but enter his protest. One of the very latest engagements of Telford was the survey of Dover harbour, undertaken, in January, 1831, to procure the estimate of a dock to the north of the Cinque Ports, with a view to the adoption of measures to check the accumulation of silt at the entrance.

In addition to the works which he executed himself, Telford was frequently applied to for his judgment upon important schemes, and in this way he made many reports to parliament. For many years he was employed to report upon public works of engineering character for which he was appointed a Commissioner. Among his reports are several of considerable interest, especially upon proposed canals between London and Birmingham, and between the English and Bristol Channels, and on the supply of water to the metropolis, one of which was acceded to with a grant of £20,000.

For some years before his death he had gradually declined as much as possible forming new engagements, and had made preparations for the publication of such a selection from his papers as might leave on record an authentic account of the important works in which, for more than half a century he had been engaged. Having made arrangements with his executors for the completion of his work in case he should not live to finish it, he set about with ardour, and had many of the plates engraved; and after making additional arrangements respecting the paper, type, &c. before his death, the book was not published until 1838, chiefly owing to the illness and death of Mr. Turrell, the engraver, and the expense of getting up the work, and the paper forming a thick 4to. volume, entitled 'Life of Thomas Telford, civil engineer, written by himself;' containing a descriptive narrative of his professional labours; and it contains a preface and supplement, by the editor, Mr. Rickman, and a very copious index of illustrative reports and other documents. The plates, eighty-three in number, constitute a companion volume, in large folio, to which is prefixed a fine portrait of Telford, engraved by W. Radford, from a picture by S. Lane. From the manner in which he had selected and arranged the professional works are chiefly derived; and from the supplementary notice, by Mr. Rickman, and some other sources, are collected the following additional biographical particulars.

Before leaving his name of Telford acquired some distinction as a poet. He wrote in the homely style of Rassay and Ferguson, and contributed small pieces to Ruddiman's 'Weekly Magazine,' under the signature of 'A-Male Tyr.' He wrote a short poem, entitled 'Esdales,' in the first year of his early life, which was originally published in a provincial miscellany, subsequently reprinted at Shrewsbury, at the request of his friends, and afterwards inserted in the appendix to his Life. Another pleasing fragment of his composition is the advice which he gave to Mr. Currie's 'Life and Works of Burns,' published at Liverpool in 1800: it is an extract from a poetical epistle sent by Telford, when at Shrewsbury, to the Ayrshire poet, recommending him to take up other subjects of a serious nature, similar to the 'Cotter's Saturday Night.' He taught himself French, Italian, and German, so as to read them all with facility and to converse readily in French; and he has left valuable contributions to engineering literature, in the articles Architecture, Bridge, Civil Architecture, and Inland Navigation, in Telford's 'Encyclopædia.'

The more able and ablest of Mr. Rickman says he was a shareholder. He was well acquainted with algebra, but he held mathematical investigation in rather low estimation. In his early years he appears to have been tinctured with democratic opinions; but after seeing the progress of events, he always studiously avoided concurring on political subjects. In all the relations of life he commanded respect and esteem; and he was particularly remarkable for his facility in access to the service and especially for his ready communication of professional information to foreigners; a circumstance which, added to his connection with the Gotta canal and some other continental works, procured for him the highest respect on the continent of Europe. The Russian government sent frequently to him for advice respecting the construction of roads and canals; and the sixty-seventh plate in his atlas represents the details of a road designed by him from Warsaw to the Russian frontier. Although he was not connected with the Institution of Civil Engineers at its formation, he accepted a liberal invitation in 1830, and became its president; and from that time he was unremitting in his attention to the duties of the office, having become, by his partial retirement from business, a pretty regular resident in the metropolis. He ardently loved his profession, and was a great friend to the Institution, and in any task before him, that all other motives became subordinate to it. He never married, and hardly had a fixed habitation until a late period of life. He was of athletic form, and reached the age of seventy without any serious illness; but in 1827 he suffered from a severe attack of dysentery, which, after which he became subject to bilious attacks, under one of which he died, on the 2nd of September, 1834, at his residence in Abingdon Street, Westminster, at the age of seventy-seven.

He was buried in Westminster Abbey. The acquisition of property was always a secondary consideration with Telford; and in certain cases, especially of abortive speculations, he was ingenious in finding arguments for giving his assistance gratuitously. Even in increasing his charges as his reputation increased, and in demanding for his services, he seems to have been actuated chiefly by a sense of what was due to others in his profession, whose remuneration was in some degree dependent upon his own. After his mother's death he had few family connections to reside with him, and he had no personal friends except one individual above his station in life, which is stated by his biographer as his reason for not leaving his property to relations. His will, printed in the appendix to his Life, provides for the payment of handsomely legacies to many personal friends; of 2000l. to provide annual premiums to be given by the Institution of Civil Engineers; and of 1000l. each in trust to the ministers of Westerkirk and Langholm, for the purchase of books for the parish libraries. His manuscripts, &c., were bequeathed to the Institution of Civil Engineers. Telford became a fellow of the Royal Society of Edinburgh in 1803, and of that of England in 1827.

(Tel, edited by Rickman; Chambers's Scottish Biographical Dictionary and National Biography, vol. ix.)

TELINGA OF TELUGU LANGUAGE. (HINDUSTAN, P. 229.)

TELL, WILLIAM, a simple countryman of the village of Burglen near Altdorf, in Oldenland, Switzerland, towards the end of the thirteenth and during the first half of the fourteenth century. His early life is unknown, and his name would probably never have been heard of in history, if the tyranny of the Austrians had not called him from his obscurity. The beginning of the decline of the power of the Austrians was endeavouring to suppress the spirit of freedom and independence in the three Waldstädte, Uri, Schwyz, and Unterwalden, and was using every means to add them to his family estates, he sent against the Landvögte...
into these cantons, which perpetrated the most flagrant acts of tyranny, and treated the people like a conquered nation. The principal men of the three Waldstätte, in 1307, formed a league, which was headed by Walther Fürst, Arnold Melentühl, and Werner Stauffer. William Tell, who had married a daughter of Walther Fürst, also belonged to the league, though without taking any prominent part in it. The object of these men was gradually and secretly to increase the extent of their territory and to secure an opportunity for delivering their country from its oppressors, and if possible without bloodshed. While the confederates were daily gaining new strength, Hermann Gessler of Brunegg, one of the bailiffs of the Albis (1326) noticed the tendency in the canton of Uri, after various other vexatious acts, caused the ducal hat of Austria to be raised on a pole in the market-place of Altorf, and commanded that every one who passed the pole should uncover his hat, to the horror of the Urians. William Tell with his little boy happened one day to pass the pole without paying any regard to the orders of the bailiff; and he was immediately seized and taken before Gesaler. Tell had the reputation of being an excellent bowman, and Gesaler loaded a mode of punishment which should put his skill to a severe test. He ordered Tell's boy to be placed at a considerable distance from his father, and an apple to be fixed on his head. A crossbow and arrows were handed to Tell, who, without being observed, aimed to get two arrows at the same time to shoot the apple from his own child's head. The tyrant added, that if he missed the apple, the boy should die. Tell succeeded in hitting the apple. Gesaler had expected that Tell would hit his child, because of his disapprobation of the boy. He tried to find out some pretext for punishing the presumptuous peasant: he asked him why he had taken a second arrow? Tell boldly replied: 'It was intended for thee, if the first had hit my child.' The bailiff, delighted with this opportunity of satisfying his vengeance, ordered Tell to be bound and to be conveyed in a boat across the lake of Waldstätte to the castle at Küssnacht, the residence of Gesaler, who himself accompanied his prisoner. When the boat was on the lake, a storm arose, which became so violent that the boat was nearly lost. The bailiff, however, perceived that the storm was not intended for the purpose of killing Tell, and proposed to Gesaler to unfetter Tell and allow him to assist them, as he was known to be an experienced boatman and well acquainted with every part of the lake. Tell was freed from his fetters, and taking the rudder in his hand, he steered the boat across a part of the rocky shore, where a flat shelf jutted out into the lake. When he was near this spot, he seized his bow, jumped upon the projecting rock, and with his foot pushed the boat towards the shore. The storm, however, continued, and Gesaler and his men were safely landed. Tell knew the road by which the bailiff had to pass to Küssnacht, and lay in wait for him in a narrow dell. When Gesaler came, Tell shot him through the heart. This happened at the end of October 1307, and was followed by a series of wars between the Swiss and the Austrians, which did not terminate till the year 1499.

The conduct of Tell was highly disapproved of by his friends, as they wished to avoid bloodshed, and were not yet prepared to carry their plans into execution. After this adventure Tell sinks again into his former obscurity, though he is said to have taken part in the battle of Morgarten, and to have perished, in 1350, in the river Schachen during a flood.

Tell has been represented as a hero and a champion of liberty, by historians as well as by poets, but his conduct, if looked into more closely, will appear in a different light. His refusal to pay homage to the ducal hat of Austria was indeed owing to a noble independence of spirit; but his obeying the inhuman command of Gesaler to shoot the apple from his child's head is repugnant to all paternal feelings, and a true hero would have aimed at the tyrant himself. That the event was an injury to Austria, although in a measure an act of self-defence under the circumstances, yet in the manner of the execution was little better than murder.

The last part of the story of Tell, notwithstanding its being commemorated down to this day by chapels and other public monuments, has been doubted by several modern historians; while others, and among them Johann von Müller, regard it as a genuine history. The doubts about its truth have arisen from the fact that this story is told in the Wilhinska Saga, and by Saxo Grammaticus, of a Danish king Håkon and one Tell, William Tell and a count of See

dor who had extensive possessions in Uri, but most have lived early in the twelfth century. Another singular circumstance is that in the documents relating to the national Swiss corporations, and the so-called Urkunden der Geschichte der eidgenössischen Bünde there is no mention of a Gesaler among the bailiffs who resided in the castle of Küssnacht. For these and other reasons, Grimm and Ideiler (Die Sage vom Schatz Tell) have endeavoured to prove that the tale of Tell as fabulous. There are however facts which seem to confirm the historical truth of at least the groundwork of the story. It was not many years after the death of Tell that it became customary for annual processions to visit the spot where Tell had escaped with his son. In 1385 the canton of Uri built the celebrated chapel of Tell on the same spot, and it is stated that among the visitors of that year there were one hundred and fourteen who had known Tell himself. His adventure is moreover told in the same effect by all those writers who wrote at or soon after the alleged time of the occurrence.

TELLER, WILHELM ABRAHAM, son of Roman Teller, minister of St. Thomas's church at Leipzig, was born in that city, 5th January 1724. For two he attracted the attention of the theological world by a Latin translation of Kemmecott on the Hebrew Text, and after being for a year or two preacher at the Nicolai church, very unexpectedly received the chair of Bible criticism at the University of Mayence, where the Duke of Brunswick, in 1761. On entering upon his new office, he published an inaugural dissertation on 'Topie Scripture,' which was considered by Superinten
dent Bahrdt so heterodox in its opinions, that it was withdrawn at once from the press. Teller's appointment. Not deterred by this circumstance, from expressing his own convictions, Teller published a little afterwards his 'Lehrbuch des Christlichen Glaubens,' a production that caused no little noise at the time, carrying with it the further event of the Duke's despatching Teller to the University of Halle, and his appointment as Professor of Theology, with a salary of 1500 thalers per annum. The see in the capacity, he acted as professor of divinity at the University of Cologne. While in Heidelberg, Teller was invited to accept the professorship of theology at Halle, 1764, and he declined it out of regard towards his patron the Duke. But he continued to apply to his theological studies with the same ardor as before, and was instrumental in promoting many benevolent plans connected with church matters and education in public schools. The vast number of sermons and various theological writings published by him, attest not only his in
dustry, but his earnestness in the cause of genuine reproof as a rejection of the former party; thereby affording his enemies and those who lay greater stress upon speculative points than upon religious conduct as feeling an opportunity to decry him as very dangerous, heretical, and unorthodox. In 1797, he was deprived of his professorship, and banished at the time of the French Revolution. His enemies then published a pamphlet, insinuating that he was a Jacobin; and on this ground Teller was stripped of all his property, and banished. The distinguished characters belonging to the reign of Frederick the Great. He was so far however from neglecting his professional duties or relaxing his zeal, that he con
tinued to apply to his theological studies with the same ardor as before, and was instrumental in promoting many benevolent plans connected with church matters and education in public schools. The vast number of sermons and various theological writings published by him, attest not only his in
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TELLERIES OF THE EXCHEQUER were the holders of an antient office in the Exchequer. They were four in number:—their duties were to receive money payable into the public exchequer on behalf of the king, to give the clerk of the pells (skins or rolls of parchment) a bill of receipt for the money, to pay all money according to the warrant of the auditor of receipts, and to make weekly and yearly books of receipts and payments for the lord treasurer.

In 1804, the principal office was abolished by act of parliament (4 & 5 Wm. IV. c. 15), together with that of the clerk of the pells and the several offices subordinate thereto, and a new constitution established, a comptroller-general of the receipt and issue of his Majesty's Exchequer being appointed to perform the duties of the four tellers.

TRELZEL, BALTHAZAR, a native of Lisbon, was born, according to the statement of M. Weiss, in the 'Biographie Universelle,' in the year 1695. Moret states that he joined the Society of Jesus in the year 1610. In the eulogistic letter of Dom Francisco Manoel, prefixed to Tellez's 'History of Ethiopia,' he is said (at least this seems to be the writer's meaning, which his affected style renders rather obscure) to have studied ten years, and taught forty; in teaching in the most advancing literary classes in the Society's colleges at Braga, Evora, Lisbon, and Coimbra. He lectured two years on philosophy, but Manoel does not mention in what seminary. Lastly, Tellez was eight years professor of theology in the college of St. António. At a later period he was appointed to the master of the house of the professed Jesuits in Lisbon, and ultimately provincial of the order in Portugal. He died in his eightieth year, on the 10th of April, 1675. The published works of Tellez are:—I. A compendium of philosophy, a curious universe of all sciences and arts. Questionibus quse inter Philosophos agitantur, published at Lisbon, in folio, in 1642; at Paris, in two quarto volumes, in 1644; and at Lisbon, in four octavo volumes, in 1652. 2. Chronica da Companhia de Jesus da Provincia da Portugal, in two volumes, the first published in 1645, the second in 1646, both at Lisbon: 3. 'Historia geral de Portugal e da sua antiga,' in one folio volume, at Coimbra, in 1690. He is also said to have left in MS. a history of the society's labours in the East. Tellez's name is of more value than his philosophical treatise. The History of the Jesuits in Portugal is a valuable contribution to the history of that accomplished and energetic order. The 'History of Ethiopia,' or, more properly, the 'History of Jesuit Missions in Ethiopia,' is in every respect the best of its kind. Tellez's name is above other one who wishes to study the history or comparative geography of Abyssinia. The first book contains an outline of the geography of Abyssinia, of its political divisions, government, and statistics, as they existed from the time that the Jesuit missionaries first entered the kingdom till their expulsion under Facilidas. The remaining five books are chiefly occupied with the narrative of missionary enterprise, but contain important contributions to geography, the general accuracy of which has, on the whole, been improved by the testimony of later travellers. According to the preface Tellez gives an account of the authorities from whom he has compiled his book, Manoel d'Almeida, Alonso Mendes, Jeronimo Lobo, and Pero Pasa; and he adds aid fully of their information both with taste and judgment. The authorities for the statements in this sketch are the History of Ethiopia, with the preface by Tellez himself, and the letter of Francisco Manoel prefixed to it; the 'Historia geral de Portugal e da sua antiga,' in folio, at Lisbon, 1690; the 'History of Ethiopia,' with the preface by Tellez himself, and the letter of Francisco Manoel prefixed to it; the Bibliotheca Steinii, in the 'Dictionnaire Historique' of Louis Moreri, and in the 'Biographie Universelle.'

TELLICHERY. [Hindustan, p. 207; Malabar, p. 122.]

TELLINA. [Conchacea, vol. vii., pp. 428, 429.]

TELLITIDES. [Conchacea, vol. vii., p. 428.]

TELLUR'RIUM, a metal which was discovered in 1782 by Müller of Reichenstein, but its properties were more minutely examined by Klaproth sixteen years afterwards, and he gave it the name it now bears. It is a scarce metal. Its properties are the following:—its colour is silver-white, and it is very brilliant; it is crystalline and brittne, of a lamellar fracture, easily pulverized, and a worse conductor of electricity, than antimony or bismuth. Its specific gravity, according to Klaproth, is 6:115, while Magnus makes it 6:139. It is nearly as fusible as antimony, and at a high temperature it boils, and may be distilled. When strongly heated in contact with air, it burns with a lively blue flame, green at the borders, and forms white vapour, which has an acid odour. The principal ores of tellurium are the following:—

Native Tellurium. It is found crystallized and massive. Primary form a rhomboid; occurs in minute six-sided prisms, the terminal edges of which are usually replaced. Cleavage parallel to the faces of the prism. Fracture indistinct. Hardness: scratches sulphate of lime, and is scratched by the carbonate. Easily frangible. Colour tin-white or steel-grey. Lustre metallic. Specific gravity 5:7 to 6:115.

Before the blowpipe very fusible, burns with a greenish flame, and is volatilized in a white vapour. It is soluble in hydrochloric acid.


It occurs in Transylvania. Klaproth's analysis gives,—

Tellurium
Iron
Gold

92:35
7:20
0:25

100


It occurs accompanying gold in narrow vein traversing porphyry at Offenbany, and also at Naggay, in Transylvania.

Analysis by Klaproth

Tellurium
Iron
Gold
Silver
Lead

60
24
10
11·3
1·5

100

98·8

Benzelius found also a little sulphur, arsenic, antimony, iron, and copper.


It occurs at Nagyas in Transylvania, and in the Altai Mountains in Siberia.

Analysis by Klaproth

Tellurium
Gold
Silver
Sulphur

44·75
26
8·50
0·50

100


Before the blowpipe is fusible on charcoal, and covers it with oxide of lead; reducible into a grey metallic globule, which eventually leaves a button of gold.

It is found at Nagyas and Offenbany in Transylvania.

Z 2
Brandes and Berthier have also analyzed this ore from Naga-y; their results differ considerably from the above, and also from each other.

**Bismuthic Tellurium.** Telluret of Bismuth.—Occurs crystalized in small six-sided prisms. Cleavage parallel to the base of the prism. Fracture indistinct. Hardness: sketches conchoidal; and is scratched by flour-spar. Colour steel-grey or zinc-white. Luster metallic. Specific gravity 7·52.

Fusible by the blowpipe, and dissolves the odour of selenium. Acted on by nitric acid, and the solution is precipitated by water.

It is found in Norway.

**Analysis of Wehrle:**

<table>
<thead>
<tr>
<th></th>
<th>Tellurium</th>
<th>Bismuth</th>
<th>Sulphur and traces of selenium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount</td>
<td>34·8</td>
<td>60·0</td>
<td>4·8</td>
</tr>
</tbody>
</table>

We shall now describe the more important binary compounds of tellurium, beginning with

**Oxygen and Tellurium.**—It has been already mentioned that when tellurium is heated in contact with air, it burns, and a white vapour is formed: this is oxide of tellurium, or tellurous acid. It may also be obtained by the action of nitric acid on the metal: by adding water to the solution, part of the oxide is precipitated, and the remainder is obtained by evaporation to dryness. The properties of this substance are, that it is a white granular amorphous powder, which slowly reddens moist litmus-paper, and is insoluble in water and acids. It is dissolved by a solution of potash or soda, and by fusing with their carbonates. Tincture salts are formed: when these are decomposed, by acids, hydrous tellurous acid is precipitated, which, if washed with very cold water, and dried at a temperature not above 53°, may be preserved without suffering change, and is soluble in water, acids, ammonia, and the alkaline carbonates, which last it decomposes: the aqueous solution reddens litmus-paper: when zinc, tin, and bismuth are added, the metal; they deoxidize it, and metallic tellurium is precipitated in the state of a black powder. Its salts are called tellurites.

It is composed of:

| One equivalent of oxygen | 8 | One equivalent of tellurium | 32 |

**Equivalent** 40

**Sequeioxide of Tellurium, or Telluric Acid.**—This is obtained by fusing tellurium with sulphuric acid: this yields hexagonal crystals of the acid: it acts but feebly as an acid, the dilute solution reddening litmus-paper with difficulty, and its taste is rather metallic than sour: the crystals contain water, two-thirds of which they lose at about 200°; if the remainder, below a red heat, becomes a mass of a fine orange colour, which is completely insoluble in water, either cold or boiling, or hot hydrochloric or nitric acids, or solution of potash. It is decomposed at a high temperature, and converted into a white powder, which is tellurous acid. Its salts are called tellurites.

It consists of:

| One and a half equivalent of oxygen | 12 | One equivalent of tellurium | 32 |

**Equivalent** 44

**Hydrogen and Tellurium.**—When tellurium is alloyed by fusion with tin or zinc, and the compound is acted upon by hydrochloric acid, the hydrogen of the decomposed acid dissolves tellurium, and tellurated hydrochloric acid is obtained. This gas has a smell somewhat resembling that of hydrolysulphuric acid: it is soluble in water, forming a claret-coloured solution; and, as it possesses acid properties, though feebly, it has been called hydrotelluric acid. It decomposes many metallic salts, yielding an alloy of tellurium with the other metal. Chlorine, nitric acid, and the oxygen of the air, all take the hydrogen from the tellurium.

It consists of:

| One equivalent of hydrogen | 32 | One equivalent of tellurium | 32 |

**Chlorine and Tellurium** form two compounds. When a feeble current of chlorine gas is passed over tellurium at a high temperature, the dichloride formed passes off as a violet-coloured vapour, which condenses at first into a black liquid, and eventually into a solid of the same colour. It is decomposed by the action of water into metallic tellurium, which is precipitated, and chloride of tellurium remains in solution.

It is comprised of:

| One equivalent of chlorine | 36 | Two equivalents of tellurium | 64 |

**Equivalent** 100

The Chloride of Tellurium is obtained, as above stated, by the action of water on the dichloride, but is better prepared by passing a larger quantity of chlorine over tellurium at a lower temperature than in forming the dichloride. It is volatile like chlorine, and any excess is separated by agitation with mercury and rectification. A white crystalline solid is obtained, which is composed of:

| One equivalent of chloride | 36 | One equivalent of tellurium | 32 |

**Equivalent** 68

**Sulphur and Tellurium** combine in two proportions: the sulphuret is obtained when hydrolysulphuric acid gas is passed through a solution of chloride of tellurium, tellurous acid, or of a soluble tellurite. It is of a dark brown colour, and is soluble in a solution of potash. It is formed of:

| One equivalent of sulphur | 16 | One equivalent of tellurium | 32 |

**Equivalent** 48

**Persulphuret of Tellurium** is obtained by mixing a solution of persulphuret of potassium with one of a salt of telluric acid. It is of a deep yellow colour; but it is a very unstable compound, and, when exposed to air, rapidly becomes black and is converted into protosulphuret.

**TELOPHONUS,** Mr. Swainson's name for a genus of Lanniana [Shirikes, vol. xii., p. 416], which he thus characterizes—

Bill more lengthened (than in Lanina), slightly hooked: the tooth smaller. Wings very short and rounded. Tail lengthened, graduated. Lateral toes free; the inner very slightly shorter than the outer.

Example, **TELOPHONUS LEUCOGRAMMICA.**

**Bill of Telo[phone]hus leuco[grammica.** (Tr., *Classification of Birds, vol. vi., P. 229."")

**TELUGU or TEILINGA LANGUAGE.** [Hindix, P. 229.""]

**TEXANZA, TOMMASO,** an architect who is better known by his writings relative to his art than by the buildings which he executed, was the son of an architect, the nephew of another architect (Giovanni Seclafroti), was born at Venice in 1703. Having finished his mathematical studies in the schools of Padre Niceto Casini and the eminent Marchese Poldi, he was appointed, although then only twenty-one—one of the assistants of the Commission of Engineers, and in 1712 became chief of that body on the resignation of Bernardino diini, a few years before the latter's death. He now shared in the hydraulic commission caused him for many years to be involved in literary disputes, he having offended people of Padua by a publication entitled 'Dell' et Corso de Fiumi in Padova e suoi Contorni;' wherein he asserted that their ancestors had attempted to turn...
of the Brenets. As an architect he had not many opportunities afforded him, for the period of Venetian grandeur and enterprise in art had passed away. He was however employed to execute one of the very few public edifices of any kind erected at Venice in the last century, namely the church of La Madonna, a structure of the late order, and which, though it may be said to be comparatively pure, is also somewhat feeble and insipid in design. His other principal architectural works are—the facade of Santa Margherita, at Padua; the Rotunda at Padua, built at the time of the court festival; and the bridge over the Breneta at Dolo. It is as a writer that Temanza is chiefly known, more especially by his 'Vivere più Ecellezenti Architetti e Scultori Veneziani,' 4to., Ven., 1719; which is one of the most copious as well as best documents of the kind. In the number of lives it contains, it being in that respect scanty, but for the unusual extent at which they are given. In fact several of them, Palladio, Sansovino, &c., had previous to them been published separately. Besides this literary production, which is an important contribution to architectural biography, he published the 'Antichità di Rim.,' folio, 1741; and left behind him another work, 'Delli Archi e delle Volte, e delle Regole generali dell' Architettura.' It is made to cultivate the taste of the gentry and is likewise a great many letters by him on architectural topics in Ticozzi's edition of Bottari's 'Raccolta di Lettere sulla Pittura.'

Temanza died at Venice, June 14, 1789, and was buried in the church of La Maddalena. There is a portrait of him in Gamba's 'Galleria d'Uomini Illustri,' to which seat, and to Comolli's 'Bibliografia Storica Critica dell'Architettura Civile,' we are indebted for some of the particulars here given.

Temeswar, The Banat Of, is one of the finest and most remarkable portions of Hungary, comprehending the counties of Torontal, Temes, and Kissova, and the German and Wallachian. It consists chiefly of mountainous, and sometimes not considered as part of the Banat. The area of the whole is 11,340 square miles, and the population is said to be above 2,660,000; but there is no part of the Austrian empire the population of which it is so difficult to ascertain, as the whole is bounded by the north by the Maros, separating it from the counties of Arad, Coșoeggard, and Cranad; on the west it is separated by the river Theiss from the counties of Coșoeggard and Baia, and the Czask district, and by the Danube from Slavonia; the whole is rich in woods obtained by the Cesma, and the offsets of the Carpathians, extending from Transylvania, from Little Wallachia, and Transylvania. The Magyars comprehended it in the military district of Kánt. It was a frontier province against Wallachia, Transylvania, and the Turks. The latter however got possession of it in 1552, and retained it till 1716; when, in consequence of the victories of Prince Eugene, it was restored to Austria by the treaty of Passar. While the town was in the possession of the Turks it consisted of only a few houses and an old castle, which is still habitable. When Prince Eugene made himself master of it in 1718, the strong fortress of Temeswar was built against the Turks, and the town was built in the modern style. The inner town, or fortress, is surrounded by triple walls and moats, and consists of large uniform stone houses, in straight, broad, well-paved streets. There are three gates, the Vierenburg, and two others, which are defended by strong blockhouses. The casemates are capable of containing 3000 men. Temeswar is the seat of the Roman Catholic bishop of Csnad, with his chapter and seminary, and of the schismatic Greek bishop of Temeswar. There are two other episcopal sees in the three counties, the offices of the governor of the fortress and of the commander of the Banat military frontier, a military academy, a great arsenal, and many other offices connected with the military and civil administration. The principal buildings are—I, the old strong castle of John Hunyady, built of freestone, the
tremely fruitful. In the middle of the two military frontier districts lies the most extensive sandy tract in the whole Austrian empire, in which there are however many oases. The principal points of the high mountains are Sarko, Ggug, Murrau, and Godjan; on the lower mountains there are vast and fine forests. The principal rivers are the Danube, Theiss, Maros, Kodok, Temes, and Bega. In 1748 and the following years canals were made in order to drain the marshes: the principal of these is the Bega canal, 75 miles in length, which traverses the principal part of the Torental, and is conducted into the Theiss. By the draining of the marshes, tracts which in the latter half of the last century were stagnant pools, the source of pestilential exhalations, are now covered with the finest common fields, or, where they have been imperfectly reclaimed, with crops of rice, and the salubritity of the country has been greatly improved. The protection which the mountains give against the east and north-east winds, and the mitigation which the north winds experience in traversing the great plain, raise the temperature to that of a southern country, and the rich soil yields abundant crops. The wheat and maize of the Banat are of the finest quality. Rice is extensively cultivated. Successful attempts have been made to raise sugar-cane, and a sweet wine is produced. There is no part of Hungary in which colonization has been attended with such favourable results by the settlement of industrious foreigners as the Banat, where there is still so much uncultivated land, and the existence of some of the hamlets, the climate is very healthy. Mineral springs are frequent, but little use is made of them. Only those of Mehadia, which were known to the Romans by the name of 'Therma Herculis,' are still much resorted to, especially by the Wallachians. Between 1800 and 1820 the Banat, Roman antiquities are frequently found. The population of the Banat, which is continually increasing by the accession of foreign settlers, is almost entirely of foreign extraction—Banats, Hungarians, gypsies, Germans, Jews, French, Italians, and other foreign settlers: among whom, in the mountainous districts, the Wallachian language is prevalent; in the towns and colonized plains, the German; and in the districts of the military frontier, the Illyrian. The natural productions are horses, horned cattle, swine, wheat, maize, rice, flax, hemp, tobacco, fruit, wine, wood, madder, saffron, silk, timber, honey: game of all kinds and fish abound. The minerals are gold, silver, copper, zinc, and some iron. The fine gypsys' rock is found in many spots of the rivers. Between 4000 and 5000 workmen, chiefly Wallachians, are employed in the mines. The chief occupations of the inhabitants are agriculture and the breeding of cattle. There are many viticulture. The county of Temeswar, as has been stated, is one of the three included in the Banat, and needs no separate description. A circle of the county bears the same name. Temeswar, the capital of the Banat and of the county, is a royal city, situated in 45° 45' lat. and 21° 40' long, at the confluence of the Temes and the Bega, and on the Bega canal, in a part of the country which is rendered unhealthy by the stagnant waters in the vicinity. It is one of the strongest fortresses and one of the handsomest and finest regular towns in the whole Austrian empire. While the town was in the possession of the Turks it consisted of only a few houses and an old castle, which is still habitable. When Prince Eugene made himself master of it in 1718, the strong fortress of Temeswar was built against the Turks, and the town was built in the modern style. The inner town, or fortress, is surrounded by triple walls and moats, and consists of large uniform stone houses, in straight, broad, well-paved streets. There are three gates, the Vierenburg, and two others, which are defended by strong blockhouses. The casemates are capable of containing 3000 men. Temeswar is the seat of the Roman Catholic bishop of Csnad, with his chapter and seminary, and of the schismatic Greek bishop of Temeswar. There are two other episcopal sees in the three counties, the offices of the governor of the fortress and of the commander of the Banat military frontier, a military academy, a great arsenal, and many other offices connected with the military and civil administration. The principal buildings are—I, the old strong castle of John Hunyady, built of freestone, the
Phreneotia Teniae. (Hom.)

TEMNU'RUS. [TROGONIDAE.]

TEMPE (Τεμπε, called also Thessala or Thessalica or Phithotia Tempe) was the antient name of a beautiful valley in Thessaly, lying between Mount Olympus on the north and Mount Osse on the south, near the mouth of the river Peneus, which runs through it. It is a narrow plain, not quite five miles long, opening on the east into a wide plain which extends to the Thessalian gulf. It forms the only break in the great chain of mountains by which Thessaly is surrounded on all sides. Antient traditions asserted that the great plain of Thessaly was at one time covered with water, which was at length discharged by the vale of Tempe, which was opened by a stroke of Neptune's trident, or (according to another legend) by the strength of Hercules. The appearance of the country has led modern travellers to accept the mythical story as meaning that the pass was opened at some period by a great convulsion of nature. The rocks which enclose it are in precipices from the bed of the Peneus, and at the very point these precipices approach so near each other that the road is cut in the face of them.

The Greeks revered Tempe as the place from which Apollo transplanted to Delphi his sacred laurel, and adored it as the most beautiful spot in their country. The most vivid description of it is of Aelian (Var. Hist. ii. 1). See also Ovid, Metamorph., i. 569, etc.; Livius, div. 6; Plin., Hist. Nat., iv. 8; Cramer's Greece, i. p. 79; the Tours of Clarke, Holland, Dodwell, and Gell; ad Theaem, Greece, i. p. 5.

TEMPERAMENT (τέμπερια, συν' ἡμας) is a vague and unsatisfactory term, but still it is one which, as Dr. Sayo observes (Pathology of the Human Mind, London, 2mo, 1838, Appind., p. 162), has for many centuries been found a convenient generalization; and unless we promise to sacrifice knowledge at the altar of logic, we must still be contented to use this or some other equally indefinite term. The word means literally a tempering, a mixing together, and may be defined to be a peculiar state of the system common to several individuals, which results from the various proportions in which the elementary parts of the human body are mixed up together, and which gives rise to a tendency to certain phenomena. There is besides in each individual a further peculiarity of combination, which serves to distinguish his temperament from that of any other person, to whom however he may in other respects bear a great resemblance. This indi

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Among these qualities was supposed to constitute the best form of temperament or constitution (σέποσλία), of which the following is Paulus Aegineta's description (Ibid., i. 60):—"That man is in the best temperament of body when it is in a medium between all extremes, of leanness and obesity, of softness and hard-

subject of temperaments, and pointed out various peculiarities in the constitution and actions of the human body, which have been seen so far to coincide with general observation, that the question of temperament has continued in very general use even to the present day, although the hypothesis on which it was founded is universally discarded. They described four temperaments corresponding to the four qualities of Hippocrates—hot, cold, moist, and dry. It was supposed that there were four corresponding primary components of the human body, namely, blood (αἷος), phlegm or phlegma (φλεγμα), and the two kinds of bile (αἷος χελαν), yellow bile (χαλυβαν), and black bile or atra bile (μαλακνα χολα); and the preponderance of one or other of these components in different persons produced the different temperaments. These four primary principles of living bodies were supposed to be compounded of the simple elements or qualities of nature thus: hot and moist produce blood; cold and moist, phlegm or phlegma; hot and dry, yellow bile; and cold and dry, black bile. Body in which blood superabounds are of the sanguine temperament; if phlegm is in excess, the phlegmatic temperament is developed; if yellow bile, the choleric; and if black bile, the melancholic or sanguineous temperament. The following is the description of the different temperaments given by Paulus Aegineta (De Re Medico, lib. i., cap. 61, in Mr. Adam's Translation (London, 1834, 8vo).—"These bodies which are of a hotter temperament than the phlegmatic, and moderate will have the skin red and will grow in like manner. They feel warmer to the touch, and have less fat; they are of a ruddy colour, and have their hair black and moderately thick, and their veins are strong. But if such a one be also fat and brawny, and have large veins, he is fat there has hight, and he will be veinous.

The following are the symptoms of a cold temperament: such bodies appear cold to the touch, are without hair, and are fat; their complexion, like their hair, being tawny. If, when the coldness is great, they are pale, leaden-coloured, and have small veins, and if this condition does not proceed from nature, but habit. The dry is harder and more slender than the temperate, the hardness indeed being inseparable from the dry temperament; but leanness not only follows dry temperament, but also those which are acquired by long habit. It is peculiar to the humid temperament that the body is oppressed by things of a moist nature. The warm and dry temperament, in other words, the choleric, is extremely shaggy, having the hair of the head in early age of rapid growth, black, and thick; but in after-life baldness follows. The veins are large, as are likewise the arteries, which beat strongly. The whole body is firm, well articulated, muscular, and without obesity; and the skin hard and dry. When the temperament is cold and moist, the skin is yellowish, the hair is short, and, like the rest of the body, without hairs; the skin is soft and white, and its hairs somewhat tawny, especially in youth; and such persons do not get bald even when they grow old. The hair is sonorous, simple, and inac

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nese, of heat and cold, of moisture and dryness; and, in a word, who has all the natural and vital energies in a faultless state. His hair also should be neither thick nor thin, neither black nor white. When a boy, his locks should be rather tawny than black, but when an adult, the contrary wise.

Further information respecting the opinions of the antients on the subject of the temperaments may be found in the treatise of Hippocrates, De Natura Hominis, tom. i., ed. Kühn; in Galen's works, De Elementis ex Hippocrate, tom. i., De Angiis, and De Optibus Commonwealth, tom. iv., and De Santitate Tuenda, lib. v., De Nat. Lib. Cap. Doctrines, cap. liv.; and, in addition, they are stated in the works of Aetius, Albahaus, Synopsis, lib. v., cap. 43, sq.; Aetius, Libri Medicinae, lib. iv., cap. 53, sq.; and, in Artic Medicinae, lib. i.; Oribasius, Synopsis, cap. 43, sq.; Accius, Libri Medicinae, and, in his Art Medico, tom. i.; Oratibus, Synopsis, lib. v., cap. 43, sq.; Aetius, Libri Medicinae, lib. iv., cap. 53, sq.; Galen, Theor. lib. i.; Averroes, Colig., lib. ii.; Alahus, Theor., tract. vi.; and Avicenna, Cantica.

After the revival of letters, this fourfold division was adopted in its most essential parts by all the most eminent physiologists. Stahl ingeniously adapted it to the modern doctrines of the humoral pathology; and even Boerhaave, although he increased the number of the temperaments to eight, and relinquished the erroneous opinions of Hippocrates and Galen respecting the constitution of the blood, yet he has preserved the character of his temperament from the principles of the humoral pathology, and supposed them to be formed merely by different combinations of the four cardinal qualities. Many late physiologists have been inclined to doubt whether the external characters, which are listed with the four temperaments, are signs of the internal organization and the resulting varieties of predisposition, which are chiefly interesting with regard to pathology. Hoffmann and Cullen have indeed retained the old division, supposing that the theory of the antients as to the peculiarities of constitution was founded originally upon facts, though subsequently combined with an erroneous theory. Haller seems to have been the first who decidedly opposed the antient doctrine, not only by showing that there was no foundation for the varieties of the temperaments in the peculiar nature of the fluids, but by substituting in their place the vital actions of the system. Darvin proceeded upon the principle of Haller; and, in conformity with the hypothesis which he adopted of reducing these actions to the four heads of irritation, sensibility, imagination, and association, he formed four temperaments in which these qualities were supposed respectively to prevail. The only attempt however to improve upon the Hippocratic theory and division which has been made, is by any degree of Dr. Gregory, who, to the four temperaments of the antients added a fifth, which he called the nervous, and bestowed upon three of the others the new appellations of the tonic, the relaxed, and muscular temperaments. Dr. Prichard, however restricts the number to four, and designates them by their original names; remarking that only four strongly marked diversities of external character present themselves to observation; that the nervous temperament is not so distinguished; and that therefore, as this is an essential part of the original scheme for the distribution of temperaments, the improvement proposed by Dr. Gregory is base and defective. These four varieties then of external character really indicate, more or less constantly, well marked diversities of constitution, and consequent peculiarities of disposition. There is no doubt that persons having the complex and other signs of the sanguine temperament are more liable to certain classes of disorders than the phlegmatic or melancholic; the latter have their own peculiar tendencies. The sanguine, having a fully developed vascular structure, and therefore a vigorous circulation of blood, a warm skin, and a high degree of organic sensibility, are more liable to sudden and powerful impositions, and to those of more than the vital functions. They are subject in a greater degree to severe inflammatory disorders, and disorders of this class are in them more acute; they bear however, better than persons of more languid habit, evacuations of blood and the other effects of those disorders which are the remedies for these diseases. The greater fulness of blood-vessels, of those at least which are near the surface, the greater warmth of the skin, and the florid complex of the sanguine, afford reason to believe that the circulation given to this temperament is not wholly uniform. We likewise find that sanguine persons are more subject to hemorrhages (to those at least which are termed "haemorrhages") as arising from excess in the force of circulation through the external parts. Individuals of the phlegmatic temperament are predisposed to disorders arising from, or connected with, a low degree of vital energy. Local congestions, blood arising independently of general excitement, are under this category. Glandular and tubercular diseases are common to both with the vital functions, and are perhaps more frequent in the phlegmatic than in other temperaments. Inflammatory complaints, when they attack the phlegmatic, are less acute and more disposed to terminate in chronicity than those of the sanguine; and at least the latter have been treated by appropriate remedies.

The relations of the choler to the melancholic temperament are similar to the relations which the phlegmatic bears to the sanguine; the former displays greater vitality both in health and disease, than the latter. The choler and sanguine, when affected by diseases of the nervous system, have complaints of greater violence and horror; mania or raving madness belongs particularly to the melancholic temperament. The same may be said of the others) to these constitutions. The melancholic temperament is most prone to monomania, attended with dejection and melancholy illusions. Hypochondriasis more frequently affects the phlegmatic and melancholic temperaments, and is a distinct disease. In some of the external characters of the sanguine temperament. The most severe cases of hypochondriasis in Dr. Prichard, and those which approached most nearly to the madness of the melancholy, have been described by Hoffmann, who said that the soul is the same in all men, but the body is different in different individuals. The soul ever like itself both in greater and in less, for it can change neither by nature nor by custom; but the body is subject to continual alteration. The dispositions of the mind depend upon the body; there are many states or lattices which sharpen, and many which obtuse it. Hoffmann, De Vicissitudes Rationum, lib. i., § 21, tom. i., p. 600.) In a disease not is the cause of disease. What do the temperaments, that the intelligence of the mind depends greatly on the body, the diseases of which affects the mental faculties, and draws the latter into conatus. (Hipp., Epist., tom. iii., p. 824.) Among the works of Galen there is a treatise entitled Quad. lib. Corpo Ratione Temperamenta sequentia, tom. iv., ed. Kasu. written expressly to establish the connection between passions and desires of the mind and the temperament wherein he has handled the subject very ingeniously and has delivered many profound views of the human economy. But it is in the works of modern writers that we find this doctrine most fully developed, and foundation for a division of human character. According to Hoffmann, the dispositions of the body in the human organization disposes men to precipitate and impetuous conduct, to anger, audacity, impatience, temerity, quixotic excitation, and the like. On the other hand the disposition of the blood through the vessels of the heart — which is the result of its circulation — in such persons timid, slow in business, anxious, subject with difficulty of forming or uttering opinions. The sanguine by a happier temperament are rendered cheerful, and the choler have a disposition to those of more phlegmatic to be lazy, somnolent, and torpid. Certain temperaments qualify men for particular situations in society. Melancholic men, says Hoffmann, should be the ministers and counselors; choleric persons should be employed in matters that are to be acted on quickly; and sanguine men, the conductors of all business requiring energy and dispatch; and it was with some such impression concerning the peculiar qualities of this temperament that Napoleon, after
NEW LONDON [Connecticut].

NEW MEXICO [Mexican States].

NEW RIVER. [Middleton, Sir HUGH.]

NEW SIBERIA. [Sibera.]

NEW SOUTH SHETLAND is a group of islands situated south of latitudes 70° and about 600 miles from Cape Horn, between 61° and 63° 30' S. lat. and 33° and 63° W. long. They extend from east-north-east to south-south-west, over a space of nearly 300 miles, and consist of twelve islands of moderate extent, and a great number of rocks and rocks presents to the Capetowners. The high rocks which enclose, and have frequently been visited since that time for the purpose of taking fur-seals and sea-animals, with which the shores abound. The largest of the islands from east to west are Clarence, Elephant King George, Strachan, Mitchell, Buffalo, and Clarence Islands. The area of these islands consists of high hills or mountains. A mountain on South Island attains the height of 6600 feet above the sea. They are almost entirely covered with snow all year long. The snow in some places is more than 1000 feet deep, and averaging 600 feet, the snow-covered mountains are very numerous. 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Though commonly considered as a portion of the Appalachian Mountains, it claims a distinct consideration, and ought to be designated by a particular name, for which we propose that of Acadian Mountains, as the greatest part of this mountain-region was formerly known by the name of Acadia. The Fishkill hills run from the banks of the Hudson north-east and north through New York, until they approach, in the counties of Westchester and Connecticut, and Massachusetts meet, and where they take the name of Taghanic range. From this point, continuing to the east of north, they constitute the boundary between Massachusetts and New York, until, by declining more to the east, they become the first-named Green line, and proceed into Vermont, where they are called the Green Mountains. Between them and the Tuscara range extends the valley of the middle Hudson.

The Essex Mountains are situated entirely within the limits of New York, and have only lately and partially been explored. They occupy the country between 48° 26' and 44° 30' N. lat., enclose Lake George, extend along the western shores of Lake Champlain, and reach westward probably to 74° 30' W. long., so that they extend about 5 miles in width. West of them is a elevated table-land, which seems to run to 75° 40' W. long., and which on the south terminates in the valley of the Mohawk river, which valley separates it from the Tuscara range, where the Hudson rises in the east and west.

New York contains seven regions, different in configuration of surface and in fertility, and to a considerable degree also in climate—the hilly region of the Susquehanna and Delaware rivers, the elevated table-land, the valley of the Alleghany range, the northern region, the valley of the Mohawk river, the valley of Lake Champlain, and the vale of the Hudson river, to which the island of Long Island and Staten Island are to be added.

The region of the Susquehanna and Delaware rivers comprises the country which is surrounded on the east and north by the Tuscara range, and is drained by the upper branches of the Delaware and those of the eastern branch of the Susquehanna; it extends westward to about 76° W. long., and the Alleghany range in part exceeds in absolute elevation 2000 feet. Some valleys which descend from the Tuscara range, chiefly in a south-western direction, contain rather wide and extensive bottoms of great fertility, which in their natural state are overgrown with forest of sugar-maple, black walnut, elm, beech, and other trees, indicating a strong soil. The declivities of the mountains are rather steep, and their soil of inferior quality; they are mostly overgrown with pine, among which oak, chestnut, and hickory are intermixed; on the valleys, when cultivated, crops, rising rapidly, and the population has, in the last twenty years, probably doubled twice. The central portion of the eastern passes through the depression, but the western part passes over the higher grounds which separate it from Lake Ontario, about ten or twelve miles from the shores of Lake Ontario, does not appear to be much more elevated than the Lake Country. Its surface is uneven and broken, and the soil partly stoney and galk, and in general of different quality. From the higher ground the country descends uniformly and gradually to Lake Ontario, exits between the two regions, a distance of 8 miles, it is traversed in its whole length by what is called a Valley of the Mohawk. The Rondout or Alluvial Plain, is composed of common beach sand and gravel stones, generally worn smooth by the action of water, and the whole is interspersed with small shells. Its general altitude above the neighbouring land is 30 feet, and its width varies considerably. The Lake Ontario region consists of a lake of about 120 or 130 feet above the level, and it appears that it is about 150 feet above Lake Ontario, from which it is 6 or 10 miles distant. It is conjectured that once constituted the shores of that lake, which by some it is supposed that its outlet has sunk about 130 feet below its present level. As the country on both sides of this extraordinary ridge is thickly wooded, but the ridge itself without vegetation, the first settlers chose it as the line of road, whence it derives its name. We find no mediocrity of soils, and that ground is so well formed as to contain an alluvial valley, which country traversed by the Alluvial Way seems to be of different quality.

The northern region comprehends the country lying north of Lake Onondaga and of the valley in which the Mohawk river flows, as far east as the mouth of the East Canada creek. Further east its southern boundary is formed by a line drawn from the last-mentioned place to Glenn Falls on the Hudson river, which occur where the river flows from west to east. It is separated from Lake Champlain by the means of a depression, which extends to the Canadian line, the St. Lawrence, and westward to Lake Ontario. It comprehends the Essex Mountains, as well as an elevated and extensive table-land lying to the west of the mountains, and the declivities with which the mountains terminate. The wilderness which this region comprehends about one-third of the surface of the state, and a great portion of it, perhaps one-half, is uninhabited. The mountains occupy the eastern part of the region: they begin on the south, between Glenn Falls and the Hudson river, and the southern extremity of Lake George. A level ridge separates that lake from Lake Champlain, but the more elevated portion of the mountains extends along the western shores of Lake George northward. In its southern portion they do not appear to rise to a great elevation, but north of 44° N. lat., and especially between 45° 30' and 44° 10', some of its summits rise above the line of trees. The most elevated, called the High Peak of Essex, stretches from Giant's Mountain, attains an elevation of 1346 feet, and is more than Mount Catskill, the most elevated summit of the Adirondacks, and the height has been determined, and only about 500 feet less than Mount Washington, the highest summit of the White Mountains in New Hampshire. Mount Marcy, and a part of the Giant Mountain, attains 4515 feet, and several other peaks rise between 4000 to 5000 feet. The snow does not disappear from the summit of the Giant's Mountain till after the middle of July. The valleys embosomed between these higher ranges are from 2000 to 3000 feet above the sea-level, and to a great length uninhabitable. In the Alps, valleys of such an elevation are only inhabited during some weeks in the summer. The valleys are however covered with pine, spruce, and birch trees.
Towards the summit of the mountains, these trees become brashful, and are intermixed with each other by their numerous horizontal branches. On the highest summits however the trees disappear entirely, and are replaced by masses, lichens, and small alpine plants.

The climate of this elevated region is so cold, that ice is sometimes formed in September and October, and even in August. Towards the south the valleys are much lower, and a few settlements have been made. It is not exactly known how far the mountains extend westward, but probably they reach to 74° 30' W. long., enclosing the numerous upper branches of the Hudson river. West of this mountain-region lies a table-land of an uneven surface: as no settlements have been formed here, it is little known, except that it does not contain ridges of high mountains, that a portion of it is covered with swamps, and a still greater part intersect with valleys of the Hudson, the precipices on which descend by a succession of rapids and cataracts.

This elevation above the sea must be considerable, and the climate extremely severe, a circumstance which will account for the entire want of settlements east of 75° 30', and northward only at a distance of from 20 to 25 miles from the banks of the river St. Lawrence. On the south the elevated region is bounded by a range of hills, which constitutes the northern border of the valley of the river Mohawk, and separates it from the upper course of Black River and the Oneida Mountains east of this range, extends between 74° 15' and 75° 30' W. long., from east by north to west by south, and is called the Sacondago Hills. According to a vague estimate of Darby, these hills rise from 1200 to 1500 feet above the sea-level, but they are probably much lower. In Virginia they have been described as beginning on the west about 20 or 30 miles from the shores of Lake Ontario and the St. Lawrence river, where the settlements commence. In the valley of Black River they extend to a greater distance, probably because the bottoms of the valley are more intersected with the debris of the hills than those of the other rivers. These settlements however occur at great distances and only on the banks of the rivers, the remainder of the region being entirely covered with woods. The climate of these declivities is very severe, as they are exposed to the prevailing cold winds which blow from the north-west.

This region is divided from the Tuscarora range by the valley of the river Mohawk. This valley may be said to begin at Rome, to which place this rapid river runs in a curve from north to south. From Rome the river flows south of east, and the valley along its banks may be said to extend about 60 miles to Amsterdam, where it opens upon the vale of the Hudson river. The valley is in general from one to three miles wide; but at 75° 30' W. long. it is traversed by a ridge of rocks which forms the southern boundary of the Sacondago Hills, and running across the river causes it to form some cataracts, which are called the Little Falls. The bed of the river above the falls is more than 500 feet lower than the sea, but below the falls it is 40 feet less. The country between the Mohawk and the Lake Onedia does not attain a height of more than 111 feet above the sea. That portion of the valley which lies above the falls is very fertile, and, in this respect resembles the lake Country. The Herkimer and German Flats, which are contiguous to the rocks forming the falls, are an alluvial tract noted for fertility. The lands below the falls are more hilly and less fertile, but still fertile enough to repay the labor bestowed on their cultivation. The whole valley is well settled, and the Grand Canal traverses it in its course.

Lake Champlain lies along the foot of the Essex Mountains on their eastern side, and on the east of the lake are the Green Mountains of Vermont, but they are at a much lower elevation. These mountains are intersected by great ridges of rocks, which attain a considerable height, and extend north and south from 25 to 30 miles apart. Two-thirds of this space belong to Vermont, and the remainder is occupied by New Hampshire. From the summit of these mountains there are to be seen at a distance of about 65 miles the high necks of mountains on which the peaks of the Green Mountains rise to a greater elevation. The higher mountains on the west extend along the river: they consist of enormous masses of rocks, from 20 to 500 feet in height. Some of these rocks rise almost perpendicularly from the shore, forming for many miles a solid wall of rock, diversified only by an occasional fishing hut on the beach at their base, and sometimes by an interval of a few acres of arable land, affording an opening for a landing-place, and a steep road leading to
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their top. The highest part of the rocks lies contiguous to the river, from which they descend towards the interior of the country. The whole tract south of the Mattawan Mountains has a very rocky soil, and the whole of the cultivated land is but of small extent. The country east of the river also rises with a bold and broken shore, but it is less high and precipitous, and the surface of the country farther back is varied by ascents and descents. It contains a much larger portion of cultivated land, and the soil is rocky and stony, so that the country is rather thinly settled, notwithstanding the neighbourhood of the populous city of New York.

Long Island is about 115 miles long from west to east, and on an average between 10 and 10 miles in breadth, as some places are seven miles across. At the eastern extremity a shallow inlet, called Peconic Bay and Gardiner's Bay, separates it into two peninsulas, of which the southern extends farthest east, and terminates with Montauk Point. A ridge of low hills extending from the north end of Long Island to the mainland and base to the southern shores there is an alluvial margin from one to five or six miles wide. Along the southern shores, and from one to two miles from it, extend long, narrow, low, and sandy islands. The intermediate space between these islands and the shores is occupied by shallow bays. The soil is everywhere sandy and light, but within the hilly tract, especially at the western extremity, and from 20 to 30 miles eastward, it is of considerable fertility. The largest portion of the eastern districts is still covered with pine. The southern shores are generally sterile and in some parts not worth cultivation. The area of Long Island is about 1200 square miles.

Staten Island is separated from Long Island by the strait called the Narrows, which forms the entrance into New York Bay, and which is about 10 miles long and 2 miles wide, with an area of 77 square miles.

Rivers, Lakes, and Long Island Sound. - On the elevated table-land which extends along the northern boundary of Pennsylvania all the long rivers which fall into the Atlantic Ocean mouth of the Hudson and east of the innermost recess of Chesapeake Bay. This region contains the sources of the Delaware (Delaware) and Susquehanna (Pennsylvania), and also those of the Allegheny, one of the principal tributaries of the Ohio. On the same table-land, and probably in the most elevated portion of it, between the upper branches of the Allegheny and Susquehanna, and within the limits of Pennsylvania, rises the Genesee, which runs in a general northern direction about 125 miles, meeting the shores of Lake Ontario. In its middle course, which lies in the Lake Country, it traverses a deep and wide valley of great fertility, and forms at Rochester, 5 miles from its mouth, a cataract 92 feet high. But above this impediment the river is navigable about 70 miles for boats.

The eastern branch of the Genesee commences that remarkable series of lakes, which extend nearly 100 miles farther eastward, and are from 20 to 30 miles distant from Lake Ontario. These lakes extend in length from south to north, or rather, lines drawn from their most northern extremities and northwestern parts. The Genesee, and the whole of the Lake Country, is a broad expanse of water, cut the shores of that lake at right angles. The most considerable of these lakes, from west to east, are, Lake Canandaigua, which is 14 miles long, and from one to two wide; Crooked Lake is 18 miles long, and about 14 miles wide; Seneca Lake is 33 miles long and from 2 to 3 miles wide; Canandaigua Lake is 26 miles long and from 2 to 4 miles wide; Skaneateles Lake is 15 miles long and from 1½ to 4 miles wide; and Oneida Lake, the most eastern, is 20 miles and 4 miles wide. Onondaga Lake, which lies between Skaneateles and Oneida lakes, is a lake long; and from the eastern shore to the center it rises, and strong salt springs, which occur at a distance of a mile from its eastern banks. All these lakes, except the most western, that of Canandaigua, discharge their water by one river. This river issues from the northern extremity of Lake Seneca, which receives the waters of Crooked Lake by a narrow channel, and winds with numerous bends through the Lake Country, running in a general north-eastern direction. Each lake discharges its waters by a separate channel into its bed. In approaching the western extremity of Oneida Lake it is met by the channel issuing from that lake, and after their union the river is called Oneida or Onondaga River.

Black River rises on the western declivities of the Essex mountains, and descends from the table-land of the northern region first by a north-western and afterwards by a north-western course. About 36 miles from its mouth it turns west, and discharges its waters into Sackets Harbour, a small bay on Lake Ontario. This river runs about 12 miles more, and is joined by several small rivulets and rapids. The lower falls, which are 7 or 8 feet in perpendicular height, occur at Brownville, eight miles, measured along the channel, above Sackets Harbour.

The table-land west of the Essex mountains contains many lakes, and some of considerable extent, but our information respecting this region is still very scanty. The most eastern ridges of the Essex mountains contain Lake George, which extends from south-south-west to north-east and is called the northern declivity of Giants' Mountain, 4747 feet above the sea-level, and enters by a western course a wide valley which is 3711 feet above the sea. After some windings in the mountain-valleys, it takes a regular course from east to west, issues from one to two miles wide, and meets the western branch. The western branch rises in the western ridges of the Essex Mountains, and runs south and east of south until it meets the eastern branch near 47° 30' N. lat. As both branches descend from a very elevated country, the current is very rapid, and is sometimes crossed by rapids and cataracts. The united river runs southward for some distance, and where it begins to turn to the east, it is precipitated over a ledge of rocks, and forms the Great Falls of the Genessee. These falls are about 200 feet above the sea, and are separated by a small island. The river turns again to the south, which direction it maintains with slight deviations to its mouth. Below Genes Falls the river becomes navigable, though the current continues to be rapid to the mouth of the Mohawk river. The ascent of the Genessee from this point to its mouth is about 140 miles, and the river below this point is wide, but still its mean breadth does not amount to a mile. In some places it widens considerably and appears like a lake, as above Newburg, and still more above Tappan. The latter enlargement, called the Hudson Bay, is about 6 miles wide, and again narrows to a width of eight miles. About 30 miles from its mouth, which is between Sandy Hook in New Jersey and the western extremity of Long Island, the river divides into two arms, which enclose the island of Manhattan. The eastern and more southern is joined by the Genessee, and runs directly to Long Island Sound, East River. Where the river meets Long Island Sound is a dangerous strait in which it forms whirlpools and eddies; this pass is called Hell-gate or Hurigate. At the city of New York the East River unite again with the Hudson River or proper Hudson. The spacious bay of New York is formed. But before the river enters the sea, it sends off another arm to the westward, which surrounds Staten Island, under the names of Newark Bay, the Kill, and Ambory Bay. The latter navigation is from 30 to 35 miles wide, and from its mouth, and to Troy, 36 miles farther up for ships. It may be ascended by boats to Genes Falls, but the navigation is now superseded by the Champlain Canal, which extends along its western banks. The whole course of the river is navigable for ships of 400 tons, and at a distance of 20 miles from the mouth-region the Hudson is not joined by any considerable tributary, except the Mohawk river, which rises at the table-land west of the Essex range, near 75° 38' W. long, and runs southward. About 14 miles north of Utica is the Mohawk Falls, which is 357 feet in height, and 387 feet in a space of less than 5 miles. Some miles below these falls the Mohawk turns to the south-east. Below the village of Herkimer are the Little Falls, by which the river descends more than 30 feet in the distance of a mile. At main falls its mouth is about 700 feet above the sea and has a perpendicular height. The tide ascends to the last-mentioned falls. At Waterford the Mohawk joins the Hudson, after a course of about 120 miles.

Long Island Sound, or the strait which divides Long Island from the continent, is about 150 miles long, with a
varying width. The eastern portion, extending as far west as Stamford in Connecticu,t and Lloyd's Neck on the island, has an elliptical form, widening from about 8 miles at each extremity to about 20 miles in the middle. West of Lloyd's Neck it gradually contracts, and at its western extremity varies between half a mile and a mile, for a distance of eight miles, until it joins East River. In the western and more narrow portion of the strait, the channel is rocky and much interrupted by small islands and projecting points. But the strait has, in general, depth sufficient for the largest vessels.

Climate.—The mean annual temperature of the city of New York is between 52° and 53°, which is only 2° or 3° higher than that of London, though it is more than 10° nearer to the equator. But this city has a milder climate than the interior of the state, extending from the Hudson. The valley of the Hudson river is much colder than any part of Great Britain. In December the cold increases gradually, and the winter lasts to the end of March. In January and February the thermometer sometimes sinks to 2° Fahr. Still the dominion of snow and ice is not total, and the river is passed on the ice. The ice usually does not break up before the end of March. The spring months are raw, chilly, and damp. In summer the thermometer ranges, in general, between 60° and 80° Fahr., sometimes rising to 85° and for a few days to 90°, but rarely higher. In September the weather is fine, but there are a few severe storms about the equinox. In October and November the weather is dry and clear, but some night-frosts occasionally occur. In winter the country is covered with snow and gins to fall. But the temperature is subject to great and sudden variations, even in the same day. These variations sometimes amount to 20° and even 30° of Fahrenheit. Such is in general the climate of the vale; but the cold is much more severe towards its northern portion in the vicinity of the mouth of the Mohawk river, which is ascribed to the prevalence of the north-western winds, which blow with considerable force through the valley of the Mohawk. The same winds render the climate of the northern parts, and have a perpetual influence on the countries farther east or west. The Lake Country, on the contrary, enjoys a milder climate, its temperature being generally at least three degrees higher than that of the valley of the Mohawk. But it is subject to dense fogs, and is considered the most valuable part of the state. The climate of the southern and south-western part of the state is sometimes very severe, sometimes very mild, and not so much subject to sudden changes. The summers are very hot, and the winters very cold.

The northern part of the state is covered with snow and ice during the winter months.

Production.—The cultivated cereals are maize, wheat, rye, barley, oats, and buck-wheat. Artificial grasses are cultivated in some parts, especially in the neighbourhood of New York. Potatoes and turnips are generally cultivated. Important quantities of apples are raised. Apples, peaches, and cherries are plentiful, but pears and plums are not so abundant. Currants and strawberries are cultivated near New York. In some parts hemp and flax are grown, especially in the Lake Country. All the domestic animals of England are reared in New York with success.

A considerable part of the state is still covered with forests, which consist of oak of different species, ash, walnut, pine, maple, beech, chestnut, birch, poplar, elm, cedar, hemlock, and pine. The most extensive forests occur in the northern region.

The Panther is rare, except in the Essex Mountains, which also contain the moose-deer. Deer are still frequent in the borders of this state, and hare is still common. Other animals are, wolves, bears, gray and red foxes, raccoons, skunks, minks, beavers, otters, squirrels, and hares. The musk-rat and marten have nearly disappeared. The wild turkey has become rare, even in the western districts, but swans, geese, ducks, and pigeons are abundant. The sea and the lakes abound in fish. Several minerals occur in abundance, but only iron, salt, limestone, and marble are worked. Coal does not exist, at least not in such quantity as to be worked; and it is impeded from the coast by various physical causes.

Political Divisions and Towns.—The state of New York is divided into fifty-six counties, having an aggregate area of about 46,085 square miles. There are nine incorporated cities, viz. New York, Albany, Troy, Hudson, Schenectady, Utica, Buffalo, Rochester, and Brooklyn. Their relative importance may be inferred from the amount of their population, somewhat at the last census, viz.:

<table>
<thead>
<tr>
<th>City</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>927,849</td>
</tr>
<tr>
<td>Albany</td>
<td>76,240</td>
</tr>
<tr>
<td>Brooklyn</td>
<td>15,396</td>
</tr>
<tr>
<td>Troy</td>
<td>11,605</td>
</tr>
<tr>
<td>Rochester</td>
<td>10,885</td>
</tr>
</tbody>
</table>

There are also 124 incorporated villages,* many of which contain from 300 to 5000 inhabitants.

Brooklyn, on the East River, on Long Island, is opposite to New York, and may be considered as a suburb of that city. The two places are three-quarters of a mile distant, and communication is kept up between them by steam and ferry boats. The population of Brooklyn is now 15,396. [BROOKLYN.]

There are many flourishing towns and villages on both sides of the Hudson river. Newburg, on the west side of the river, is 61 miles north of New York, and has a population of 6424. Poughkeepsie, on the east side of the Hudson, 74 miles from New York, has a population of 7222. Catskill, on the west side of the river, and near the Catskill Mountains, about 106 miles from New York, has a population of 856. Newburg, nearly opposite to Catskill, is a large manufacturing town, and has about twelve ships engaged in the whale fishery. The population is 3392. Albany, on the west side of the Hudson, and the seat of government, is the second city in the Union. In 1812, in the midst of the war, it was the most settled settlement in the United States. Since the completion of the Erie and Champlain canals, its growth has been very rapid. [ALBANY.] Six miles above Albany, on the opposite bank of the river, is the town of Troy, which is at the head of navigation, and has a considerable trade.

The following are the principal towns on the Mohawk and the Erie canal: Schenectady, on the south bank of the river, 15 miles north-west of Albany, is the seat of Union College. Rochester, 8323. Yonkers, 4860. New York, 4198. Newburg on the Mohawk, 1000 feet in length: the population is 4258. Utica, on the south bank of the same river, 94 miles west of Albany, has a population of 8323. At this point, the Mohawk river, the Erie canal, and the great western road meet. Syracuse, 133 miles from Albany, is expressly engaged in the manufacture of salt. Canandaigua, on the lake of the same name, has a population of 6162. Rochester is on the Genesee river and on the Grand Canal, which passes through the state, and has a considerable trade in salt and in grain. It is 226 miles from Albany, 75 miles from Lake Ontario, and gives navigation within two miles of the town. Owing to the falls of the Genesee river, this place enjoys the advantage of abundant water-power for putting mills in motion and for the construction of steamboats, for carrying passengers in 1812, and in 1830 it contained 10,885 inhabitants. Buffalo, at the mouth of the Genesee river, on the eastern border of Lake Erie, at the terminus of the Grand Canal, and at the head of Niagara river. It carries on a considerable trade on the lake. [BUFFALO.]

In the western part of the state there are numerous towns equal in magnitude to some of those which have been mentioned. They are all in a thriving condition, and owe their prosperity mainly to the Erie canal. In this district the traveller meets with numerous well-built villages, only a few years old, the fruits of a country clothed in unbroken wilderness. The numerous lakes in this part of the state contribute to the beauty and variety of the landscape. Plattsburg, on the west side of Lake Champlain, has a population of 4910. Sackett's Harbour, near the mouth of Black River, is the eastern end of Lake Ontario, and is considered the best harbour in that lake: the population is about 2938.

Population.—The population of the state of New York at each enumeration since the acknowledgement of American independence was as follows—

<table>
<thead>
<tr>
<th>Year</th>
<th>Free</th>
<th>Slaves</th>
<th>Total</th>
<th>Increase per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1790</td>
<td>341,444</td>
<td>31,322</td>
<td>372,766</td>
<td>361,444</td>
</tr>
<tr>
<td>1800</td>
<td>386,756</td>
<td>20,343</td>
<td>407,106</td>
<td>346,366</td>
</tr>
<tr>
<td>1810</td>
<td>539,949</td>
<td>15,017</td>
<td>554,966</td>
<td>469,623</td>
</tr>
<tr>
<td>1820</td>
<td>637,812</td>
<td>10,988</td>
<td>648,796</td>
<td>554,363</td>
</tr>
<tr>
<td>1830</td>
<td>719,668</td>
<td>73</td>
<td>719,741</td>
<td>645,542</td>
</tr>
</tbody>
</table>

* Incorporated villages are governed by a president and trustees, who are annually chosen by the people. They differ from cities only in having more limited powers and jurisdiction. The term "town," in the New York law, is synonymous with "township."
The increase, comparing 1830 with 1790, has been 433 per cent., or at the rate of 101 per cent. annually.

At the last census, in 1830, the population was ascertained in classes, as under:

Free white population:—

<table>
<thead>
<tr>
<th>Age</th>
<th>Male.</th>
<th>Female.</th>
<th>Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5 years</td>
<td>158,077</td>
<td>151,688</td>
<td>309,765</td>
</tr>
<tr>
<td>From 5 to 10 years</td>
<td>137,071</td>
<td>133,084</td>
<td>270,155</td>
</tr>
<tr>
<td>10 to 15</td>
<td>118,523</td>
<td>115,166</td>
<td>233,689</td>
</tr>
<tr>
<td>15 to 20</td>
<td>101,712</td>
<td>105,196</td>
<td>206,908</td>
</tr>
<tr>
<td>20 to 30</td>
<td>176,754</td>
<td>168,897</td>
<td>345,651</td>
</tr>
<tr>
<td>30 to 40</td>
<td>113,136</td>
<td>104,223</td>
<td>217,359</td>
</tr>
<tr>
<td>40 to 50</td>
<td>68,877</td>
<td>64,315</td>
<td>133,192</td>
</tr>
<tr>
<td>50 to 60</td>
<td>40,303</td>
<td>36,314</td>
<td>76,617</td>
</tr>
<tr>
<td>60 to 70</td>
<td>23,909</td>
<td>22,289</td>
<td>46,198</td>
</tr>
<tr>
<td>70 to 80</td>
<td>10,044</td>
<td>9,645</td>
<td>19,689</td>
</tr>
<tr>
<td>Over 80</td>
<td>9,561</td>
<td>9,273</td>
<td>18,834</td>
</tr>
<tr>
<td>Over 100</td>
<td>255</td>
<td>304</td>
<td>559</td>
</tr>
<tr>
<td>Total</td>
<td>1,918,683</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Constitution, etc.—The present constitution of the state of New York was adopted in 1821. The executive administration is entrusted to a governor and a lieutenant-governor, who are elected by the people for two years. The legislature consists of a senate, of 32 members, who are chosen for four years; and an assembly, of 128 members, elected annually. The lieutenant-governor acts as president of the senate. For the election of senators the state is divided into eight districts, each of which sends four members, one of whom is elected every year. The members of the House of Assembly are elected by counties, in numbers proportioned to their population. Each senator must be an inhabitant of the county whence he is appointed, and, under the constitution so far as it has been, the legislature must meet for business at Albany on the first Tuesday of January in every year.

The right of suffrage in the election of public officers belongs to every white male citizen of twenty-one years of age and upwards who has been an inhabitant of the state for one year and of the county for which he offers his vote for six months next preceding the election. Free men of colour, at least twenty-one years old, may vote if possessed of an unincumbered freehold estate worth $250.

For the administration of justice there are:—a chancellor and vice-chancellor; a supreme court, with a chief-justice and two associate-justices; and eight circuit-courts, one for each of the eight senatorial districts, with a judge for each. The judges are all appointed by the governor with the consent of the senate; they hold their offices during good behaviour, and until they shall be sixty years of age. Courts of common pleas are likewise held in each county in the state, for which purpose a first judge and four assistant justices are appointed, each of whom holds office during five years.

With the exception of certain judicial and civil functionaries, ministers of religion, teachers in schools and colleges, and students, all able-bodied free white male citizens, between the ages of eighteen and thirty-five, are subject to the performance of military duty in the militia. The number enrolled in the militia of the state at the beginning of 1839 was 176,115 men.

Inland Communication.—Great exertions have continually been made to extend the means of internal communication through the state, for which purpose the public money has been freely expended, and loans have been raised on the credit of the state. In the Report of the Canal Board, made to the legislature in 1837, it is stated that the length of canals, the property of the state, then finished and in operation, was 655 miles, the cost of which was $11,982,711 dollars. The state legislature began about twenty years ago this system of internal improvements, which has been carried on extensively and with great success. The first work of a large character and importance of its undertakings was the Erie Canal, which was begun in 1817 and finished in 1825. This canal, which connects the Hudson river with Lake Erie, is 360 miles in length, in the course of which an aggregate rise and fall of 662 feet is overcome. Between the Hudson and Lake Erie is 564 feet, the ascent of the canal to its summit-level being 613 feet, and the descent only 49 feet. The canal is throughout made 40 feet wide at the surface, 28 feet wide at the bottom, and 4 feet deep. Its course is as follows:—Beginning at Lockport, it goes to the north along the west bank of that river to the mouth of the Mohawk river, along the south bank of which it passes to the west through the counties of Albany, Schenectady, Montgomery, Herkimer, and Oneida to Rome; it then takes a direct course into Madison county, turns to the west, and passes through Onondaga county to within a mile of the Onondaga or Salt Lake, enters Seneca county, and crosses the Seneca river at Montezuma. Proceeding still to the west, it passes Lyons and Palmyra, and crosses the Genesee river at Rochester: its course is still to the west for 60 miles, when, turning to the south, it joins Tonnewanee Creek, 11 miles from the river Niagara. The Tonnewanee is used for 11 miles, when the canal leaves it and takes a southerly direction along the north bank of the Genesee river, leaving the left side of the canal at Buffalo on Lake Erie; thus connecting New York with the western states of the Union. New York is mainly indebted for this great work to Governor Clinton.

The Champlain Canal joins the Erie Canal where its western course begins, near the confluence of the Genesee and Mohawk rivers; its course is nearly due north to Lake Champlain, comprising 44 miles of cutting and 145 miles of natural channel rendered navigable. The cost of these two works was $3,123,000 dollars, which occasioned a debt by the state at the close of 1838 of $2,990,000 dollars; and after they were opened amounted to half a million dollars, and have since progressively increased, until, in 1834, they reached $1,518,300 dollars. There were at the time the Report of the Canal Board was made (1837) in progress towards completion other canals 168 miles long, the estimated cost of which was more than $3,000,000 dollars; and beyond this an enlargement of the Erie Canal had been authorized by the state legislature at an estimated expense of fifteen millions of dollars. There were also private canals finished to the extent of 72 miles, and in progress 29 miles. Of rail roads finished, in progress, and authorized, belonging to private companies, there were, in 1830—

<table>
<thead>
<tr>
<th>Miles.</th>
<th>Cost.</th>
</tr>
</thead>
<tbody>
<tr>
<td>218</td>
<td>5,065,000 00</td>
</tr>
<tr>
<td>938</td>
<td>16,000,000 00</td>
</tr>
<tr>
<td>31,064</td>
<td>170,000 00</td>
</tr>
</tbody>
</table>

The state derives a considerable and constantly increasing yearly revenue from its canals. The surplus tolls of the Erie and Champlain canals, after defraying all expenses, were, in 1829, 478,694 dollars, and in 1838, 901,999 dollars; the average annual profit of the ten years was $806,764 dollars.

Property.—The value of real and personal estate within the state, as ascertained for taxation, was, in 1834—

| Total | 629,514,784 |

and the amount of taxes levied upon the same for general and county expenditure was $2,560,375 dollars. This was a little short of one-half per cent. on the assessed value, and considered with reference to the population, not quite a dollar to the family and a little more than a dollar to the farm.

Education.—The subject of education has long received the greatest attention on the part of the state legislature. For this purpose the state is divided into 10,583 school districts, which are required to make early returns of the number of scholars and the expense incurred for education of each district. In the year ending 30th of September, 1838, returns were made, by which it is shown that of 3,974 children between 5 and 16 years old, residing in those districts, there were taught in schools 218,913, or 45 in every 49. The amount
of public money appropriated to the state in that year was $35,982 dollars, or equal to 70,000/. The library of several public institutions for the purpose of education, in addition to those established in the city of New York. Among these the following are the most important:—

Union College, at Schenectady, was incorporated in 1724, and for 100 years was the only educational institution from the circumstance of several religious denominations having combined for its establishment. The buildings are two brick edifices, each 200 feet long and four stories high. Each building has two wings 150 feet wide. This college is liberally endowed. It has a library of about 600 volumes, besides the students' library of 6000 volumes. The number of students is usually between 600 and 250.

Hamilton College, at Clinton, 9 miles from Utica, was erected in 1812. It is a large building four stories high, with a library of 6000 volumes. The number of students is about 100.

Genesee College, situated at the town of that name, was founded in 1825. The number of students is 44.

Hammond Literary and Theological Seminary, situated in Madison county, 25 miles south-west of Utica, was founded by the Baptists, and incorporated in 1819. This building is of stone, four stories high, 100 feet long by 60 feet deep. The number of students is about 100.

The Theological Seminary at Auburn was founded by the Methodists in 1821. It has 34 students and a library of 4500 volumes.

The Hartwick Theological Seminary was founded under the will of the Rev. J. C. Hartwig, a Lutheran minister, who bequeathed a large estate in land for that purpose. It contains about 6000 acres of land in the state.

The United States Military Academy, at West Point, on the Hudson, was established in 1802, on a tract of 250 acres of land ceded by the legislature of New York to the United States. The staff, including the superintendent and commandant, consists of about 120 persons; and the number of cadets is limited to 200. The regular course of studies occupies four years. Each cadet is appointed by the president of the United States.

Priests, &c.—The prison discipline adopted in this state has affected the wealth and respect of foreign governments, many of which have sent commissioners to the United States for the purpose of acquiring information upon the subject. [Auburn]

Asylums for the insane poor have been founded in the state. The State Lunatic Asylum at Utica, is calculated for the accommodation of 1000 patients.

The state is provided with poorhouses, to which a farm is attached, and in which the paupers are collected. The whole number of paupers relieved or supported during the year 1836 was 37,959, of whom 29,554 belonged to the city of New York. The sum expended for the relief was $296,100 dollars ($2,520,750.), or one tenth part of which was repaid by the produce of their labour. Among the number just stated, there were 6874 foreigners, 786 lunatics, 271 idiots, and 77 deaf and dumb. The number who were in the poor-houses on the 1st of December, 1836, was—males 5714, females 3292; together 7006.

Public Debt.—The public debt of the state of New York, as it stood in June, 1836, amounted to 18,262,406 dollars, nearly 20 per cent, of which has been incurred in the purchase of public lands, chiefly by railroads and railroads. The revenue derived from the state canal has been sufficient during the last six years to defray all expenses of repairs, to pay interest on the whole amount of the state debt, and to provide for the extinguishment an average surplus of 610,000 dollars. About four months and a half of dollars have been thus paid off since 1825.

(Darby's View of the United States; Warden's Account of the United States of North America; Fowler's Journal of a Tour in the State of New York; Redfield's Account of two Visits to the Mountains in Essex County, in Journal of Science and Arts, vol. xxxii.; American Almanac for 1839; Official Papers and Reports.)

NEW YORK, the largest city in the state of New York, and the commercial capital of the United States of America, is built on the point of Manhattan Island, at the confluence of the Hudson and East rivers, in 40° 41' N. lat. and 74° 1' W. long. It was founded in 1609, by the settlers of Dutch Manhattan, to whom the states-general of Holland had granted a patent for the exclusive trade to Hudson's river, then called by the Indians the Manhattan; the same name was also then given to the island of New York. In 1621 an extensive but undefined territory on the southern side of the land was granted to the Dutch West India Company, and the city of New Amsterdam was built on the site of the former settlement. In 1664 a charter was executed by Charles II., conveying to the Duke of York the whole territory, from the eastern shore of the Delaware to the west of the Connecticut, and an armament was sent without delay from England to occupy the possession of the country. At this time the Dutch and English were at peace, and this proceeding was justified on the ground that the whole territory of right belonged to the crown of England, having been discovered by the Cabots in the previous century, and that the Dutch settlers were intruders. After fruitless remonstrances on the part of the Dutch governor of New Amsterdam, Stuyvesant, the English obtained possession of the city and territory, and immediately changed the name of both to New York. The town at this time is said to have been handsome and well built, and to have contained 3000 inhabitants. Holland made no attempt at the time nor during the subsequent war to regain possession of the settlement, and at the peace of Breda it was formally ceded to England. In 1760, when England was again at war with Holland, the town was taken by a small Dutch squadron, not without suspicion of treachery, and without a shot being fired on either side. Peace being concluded in the following year, New York was restored to Great Britain. The Duke of York was petitioned to give them some share in the management of their affairs, the same form of government was given to them as was already enjoyed by the other British plantations; a council was appointed by the proprietors, consisting of ten members, and a House of Assembly, consisting of ten members, was chosen by the inhabitants, but the laws passed by these two bodies were to have no force until confirmed by the proprietors.

The citizens of New York early took part in the troubles that ensued in the separation of the American plantations from England, and sent delegates to attend the general congress at Philadelphia, in September, 1774. In the summer of 1776 the English fleet under Admiral Howe, and the army under General Sir William Howe, having defeated the Americans under Washington, General Clinton, who had taken possession of New York and retained it until the acknowledgement of American independence. The city was evacuated by the English on the 25th November, 1783, and was occupied by an American garrison the same day.

The island upon which New York stands is 15 miles long and from one mile to three miles broad. The city occupies the south part of the island; it extends along the Hudson about two miles, and along the East River, which divides it from New Jersey, about 25 miles. The interior of the city, which was the earliest built, is ill-arranged, but the more modern parts are laid out with much regularity, and are well paved and lighted. Broadway, the principal street which runs through the centre of the town, is three miles long and eighty feet wide. It contains several handsome churches, many of the principal hotels, and a great variety of elegant shops. Wall Street, which branches off from Broadway, contains the Exchange and most of the city banks, the commodity exchanges, and brokers' counting-houses, and the insurance offices. The City Hall, the front of which is of white marble, is 216 feet long, 105 feet wide, and 60 feet high. It contains the courts of law and the places of meeting for the municipal council. The building was begun in 1803, and finished in 1812, at the cost of half a million of dollars. The Merchants' Exchange, which was destroyed by the great fire that occurred on the 16th December, 1835, was also built of white marble; its front in Wall Street was 114 feet wide, and it extended in the depth of 175 feet. A building 40 feet by 100 feet at the base, was occupied by the Post-office. The Exchange which occupied the centre of the building, was of an oval form, 85 feet long, 55 feet wide, and 45 feet high, surmounted by a dome, through which light was admitted. The building was burned in 1834 and finished in 1836.
The population of the city in the years 1820, 1830, and 1835, as given in William's 'State Register,' was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820</td>
<td>123,706</td>
</tr>
<tr>
<td>1830</td>
<td>202,589</td>
</tr>
<tr>
<td>1835</td>
<td>270,089</td>
</tr>
</tbody>
</table>

The value of the real estate assessed for taxation in 1835 was $143,732,425.

The value of imports and exports (stated in dollars) during the year 1835 was as follows:

- **Imports:**
  - Foreign Goods: $8,272,792
  - Domestic Goods: $12,061,036

- **Exports:**
  - Domestic Goods: $10,521,634

The disparity between the value of the imports and exports here exhibited is compensated by disparity in the opposite direction, in the commercial dealings of other parts of the American Union. A great part of the returns from foreign countries for the produce of Louisiana, Alabama, Georgia, South Carolina, and Georgia, are received from the ports of those states, is made through New York.

There are in the city of New York 21 banks, with capitals amounting in the aggregate to 18,111,200 dollars. These have severally a capital of 2 millions of dollars; two have each 1 million dollars; two have 1 million dollars; 10 have each capital from 500,000 to 200,000 dollars. The liabilities of the whole in the month of December, 1837, including their capitals, amounted, according to a report made by commissioners to Congress, to 35,520,534 dollars. There are 290 marine insurance companies in the United States, of which 69 are in New York, or 14 have each capital from 750,000 to 200,000 dollars. The liabilities of the whole in the month of December, 1837, including their capitals, amounted to 10,250,000 dollars, and 13 marine insurance companies, whose united capitals amount to 4,550,000 dollars.

New York contains several learned and scientific societies. Among these are:
- **The New York Historical Society**, founded in 1804
- **New York Literary and Philosophical Society**
- **American Academy of Fine Arts**, founded in 1838
- **National Academy of Design**, founded in 1825
- **American Lyceum**, founded in 1821
- **Medical Society of New York**

The University of New York, incorporated in 1831, has a capital of 120,000 dollars, raised in shares of 25 dollars. It is governed by a council, consisting of the mayor of the city, three members of the corporation, and twelve others, 6 of whom are annually elected by the shareholders from among their own body. The University comprehends two departments, one of which embraces the higher branches of literature and science, and the other provides instruction in classical, philosophical, mathematical, and physical sciences, and literature. There were in 1837, in the two departments, 17 professors and 226 students.

Columbia College, which is an institution for general literary instruction, in the city of New York, was founded in 1754, under the name of King's College. There are also the College of Physicians and Surgeons, the Theological Institution belonging to the Episcopal Church, and the New York Theological Seminary.

Of this number 4352 were males, and 3617 were females. The deaths in the first six months amounted to 529, and in the last six months to 506 of the number. Among the deaths 151 were caused by consumption, 266 were still-born, 142 were the result of intemperance, 262 arose from accidents and violence, 33 were suicides, and only 131 are attributed to old age.

The mortality of the city is lessened by the construction of sewers to carry off the filth which accumulates in all populous places. Some parts of the town are better cleansed and ventilated than others, and it has been remarked that the fever by which New York is sometimes visited is confined itself in the most confined and dirty parts of the town. The situation of the town is by nature favourable to healthiness. The constant ebb and flow of the tide prevent all stagnation of the air, and while it is sufficiently protected from the occasional violence of those of the sea, the noise from visiting the town. The strength of the tide would greatly facilitate the removal of all noxious matters. The city is very ill supplied with water, but measures are in progress for remedying this deficiency.

The situation of New York as a commercial port is admirable. New York Bay, which is completely land-locked, is about 8 miles long and from 1 to 5 miles wide, and affords a perfectly safe anchorage. It is easy of approach, and is very rarely closed by ice. The entrance between Long Island and Staten Island, by a channel called the Narrows, is protected by forts, while the approach to it is facilitated by light-houses, one of which is placed on a long tongue of land on the New Jersey shore called Sandy Hook; two others are erected about four miles south from Sandy Hook, on the lights, being 220 feet above the level of the sea, can be seen in fair weather at 40 or 50 miles distance. A fourth light-house is placed on Staten Island, at the narrowest part of the entrance to the harbour. The bay contains several small islands, which have been surrendered to the general government as sites for fortifications. There is sufficient depth of water, both in the Hudson and East rivers, for ships of large burthen to load and unload at the wharfs. The commercial intercourse with the interior and the western states of the Union is secured by means of the Hudson and the system of canals which has already been noticed.


New


...the time of William the Conqueror it was called Newbir or Newbyrig, and under that name was granted by the Conqueror to Ernulph de Hesdin. The principal streets are broad and well paved, and the town is lighted with gas. The church is a plain stone building, erected in the reign of Henry III., and there are several large cornmills, and there were formerly some woolen manufactories of importance; but they have long since disappeared.

In the great council convened at Westminster in the reign of Edward III., concerning trade and manufactures, Newcastle was a freestone and paid a considerable representation.

The average annual export of flour, malt, and unmanufactured grain is estimated at 7000 tons. The corn-market is held on Thursday. The fairs are held five times in the year. That in October is a statute fair for hiring servants (Laysons). The Kennett and Avon Canal passes through the town.

The police of the town was described in 1833 as insufficient, and considerable inconvenience was said to arise from the circumstances of the hamlet forming part of the town within the jurisdiction of the corporate magistrates. The earliest charter of incorporation extant is that of 28 Elizabeth; the charter under which the corporation acted previously to the Municipal Reform Act is dated in the first year of the reign of James II. The revenue of the corporation, derived chiefly from the manor of Newbury, is only 12s. Prior to 1818 the corporation derived a considerable income from a toll upon all grain which passed through the town; but this was discontinued during the year, and since been allowed to be apportioned by the corporation in furnishing employment to the poor of Newbury. Part of the revenue thence arising was first appropriated to the education and clothing of 20 boys in 1766. The funds of this charity were augmented in 1795 by an endowment proposed by Mr. Richard Cowlsale, the rent of which in 1819 amounted to 9l., and the number of boys clothed and educated was in consequence increased to 28. In 1790 there was a further bequest, by James Kimber, of funded property, yielding property, which he directed should be employed in the education, clothing, and apprenticing of ten boys. The boys on these three foundations form what is called the Newbury Blue-coat School. They may be said to constitute the chief of those of the corporation, same master reading, writing, and arithmetic. It is to be regretted that so little good should have been effected with such ample means. In 1819 none of the boys had been apprenticed; the master, who had held his situation for many years, was complained of for neglecting his duties. The annual expenditure on account of the charity had not exceeded 150l., and the appropriation of the residue could not be satisfactorily accounted for in consequence of the funds of the charity not having been kept distinct from those of the corporation. The charities of Newbury, which include several almshouses, the reader is referred to the 'First Report of the Commissioners on Charities,' page 41.

In the reign of Edward I. Newbury returned two members to Parliament. (Layson's 'Magnæ Brit.;' p. 319, given by him on the authority of Willis's 'Notitia Parliamentaria.' At what period it was disannexed does not appear. It is here that the Easter quarter-session for the county is held. The county of Newbury is remarkable for the battles fought there in 1643 and 1644, before and after the parliamentary forces. (Beauties of England; Parliamentariy Papers, &c.)

NEWBURY, PORT. [Massachusetts]

Newburyport is distinguished from other places of the same name as Newbury-upon-Tyne, is locally in Castle Ward, in the county of Northumberland, of which county it is the assize-town. It is 274 miles from London, by Hatfield, Ballock, Stamford, Newark, Doncaster, Boroughbridge, Wetherby, and Durham.

Newcastle appears to have derived its origin from Pons Aelu, the second station from the eastern extremity of the Roman wall. Several Roman remains furnish decisive proofs that it occupies the site of a station. Many coins were found in the piers of the old bridge thrown down by a flood in 1771, and the remains of a Roman wall, two arched fragments of walls, and large quantities of pottery, adorning the foundations of the new county-court-house, a 1810. Previous to the Conquest the place was built by the Bishop of Winchester, from a number of buildings and inscriptions. The town was also the resort of numerous piere who came to visit the holy well of Jesus' Mount, now Joymont, a mile north-east of the town. One of the principal streets in Newcastle is still called Pilgrim Street. There are considerable remains of the Black or Dominicans' College near Low Friar Lane. Another ancient town, called Padeldon, appears to have been included in the limits of the modern Newcastle: this place was in the manor of Brke its name is retained, though in a somewhat altered fort between 1773 and 1774, Pandon Pans, Bank Pande, &c. It was from a fortress built by Robert, ed is son of William the Conqueror (a.d. 1079 to 1082), with a return from an expedition into Scotland, to whom in contrast to some more ancient erection, the name of the present town was given, that the town derived its pre- sent name. In the rebellion of Mowbray, earl of Northumberland, against William Rufus, this fortress was taken by the king (a.d. 1053). In the reign of Stephen it came into the hands of the Scots, but in the reign of Henry II. 1193, and John (a.d. 1205) it was repaired and strengthened. In the reign of Edward I., John Barol, on humour at Newcastle for his crown of Scotland. The town had been early incorporated, probably by William Rufus, but the first mayor was appointed in the reign of Henry II. 1155, and the town has been since been known as Pampeden or Pampeden to the barges (a.d. 1299). The walls of the town, which had been erected perhaps in Rufus's time, we rebuilt on the eastern side, and it is likely that a portion of the old Roman wall of the station Pons Aelu was incor- porated in the early Anglo-Norman wall co-in money at Newcastle.

In the reign of Edward III. the town was attacked, but without success, by David Bruce (a.d. 1342), in his invasion of England. At the siege of Calais (a.d. 1366), Newbury was furnished with as many men as the king could spare to the other northern port except Yarmouth. In the war with Scotland, Newbury was a frequent place of rendezvous to the English forces, and it was the scene of several notable events. In 1361 it was severely attacked by the plague at Newcastle, an indication of the extent of the population of the town. In 1640 it was deserted by the king's forces and occupied by the Scots, who had invaded England. In 1641 the Scots quitted the town, which they were then using as a garrison. The town was not greatly injured. In 1644 it was besieged by the Scots, who had been given the support of the Parliamentarians, and taken by storm in 1646. King Charles was brought hither from Newcastle to the Scots, to whom he had surrendered himself. In 1647 the rebellion of the hums against the government, and the place was occupied by a body of soldiers under General Carpenter. In 1740 a serious fire took place on account of the dearth of provisions. In 1745 Rebellion of 1745-6 the town was occupied by the midnight men for the county, and by a regular military force under Marske Wade.

The town has been more than doubled in size, and near so in population, during the present century. It is situate on the summit and declivities of three lofty eminences: one from the north bank of the Thames, and the other two from the south bank of the same stream. The town extends about two miles along the bank of the Thames. The town of Gateshead, in the county of Durham, occupies the opposite bank, and may be regarded as a part of suburb of Newcastle [Gateshead]. The limits of the municipal borough formerly included the town, and county of the town of Newcastle, having an area of 1.22 acres. The Boundary Act added to this, for parliamentary purposes, the townships of Elswick, Westgate, Jemison, Southwick, Byker, and these townships have been added to the municipal borough, and Newcastle now has an area of 4366 acres. The population, in 1831, was as follows: County of the town of Newcastle, 42,760; townships Elswick, 673; Westgate, 2996; Byker, 5176; Hexton, 553; Jemison, 1313; total, 55,334. The population of Newcastle at the same time was 15,177; Newcastle at that time being of a much greater extent, taking into account the rapid increase of buildings of the population of Newcastle and Gateshead, with the adjacent villages, comprising a dense population, chiefly of farmers, may be estimated at 100,000.
In the central part of the town, which is the oldest, the streets are inconveniently narrow, and lined with old houses. Considerable improvements have however been made, and new streets have been opened in this part. In the upper and more modern parts of the town are spacious streets and squares, with regular ranges of elegant buildings, of which great note is made. The most streets in other provincial towns, is Grey Street, so named in honour of Earl Grey. The whole is well paved, and lighted with gas; the paving and lighting, which are described in the Municipal Commissioners Reports as insufficient, many object to the part side the street. The great church, known as the chapel library, placed in the north of the town, has been erected in Jesmond township, north of Newcastle; and there is another assemblage of new and respectable houses on Rye Hill, in Westgate and Elswick townships, west of the town. A large and commodious church, called Brandling Place or Village, has been erected in Jesmond township, north of Newcastle.

The town is connected with Gateshead by an elegant stone bridge of nine elliptic arches, erected d. 1767-1781, in a place of former bridge destroyed in 1719. The original town was very much widened in a.d. 1801. There are two streams running into the Tyne, one of which, the Pandon Burn, flows on the north side of the town, and crossed by the high road at Barras Bridge, and then, turning south, runs through or rather under part of the town (part of the arch over) into the Tyne, about a quarter of a mile below the Tyne bridge; the other, the Ouse Burn, runs on the east side of the town, dividing the township of Jesmond from those of Heaton and Byker, and is crossed in several places by bridges, a public road, and other buildings, and a variety of gardens, and are an occasional access to the places adjacent. It joins the Tyne half a mile below the Pandon Burn. A handsome bridge of three arches, built a.d. 1812, spans the deep and narrow valley of Pandon Dean.

Newcastle is adorned by a variety of public buildings. The church of All Saints in the town of the town is a large and handsome cross-church, 245 feet in length; it is chiefly of decorated English character. The steeple, which is at the west end, 201 feet high, is the most beautiful feature in the building, and is of late perpendicular. At the corners of the church are several towers, of 490 tons weight, covered with turrets, and their caps with crocketed pinnacles; from the base of these turrets spring four flying buttresses, crocketed and peculiarly graceful in their forms; and on the intersection of these is placed a lantern crowned with a crocketed spire, and four crocketed pinnacles. The first church imitated in those of St. Giles at Edinburgh, and St. Dunstan's in the East in London, and in other places; but the imitations fall far short of the original. The choir of the church, 116 feet long and 64 feet wide, is enclosed for service; the nave 116 feet long and 74 feet wide, is without seats; the interior is adorned by a painted east window representing Christ bearing the cross, an altar-piece of the Last Supper, and several monuments. St. Andrew's church, or former church, in the same part of town, is a fine example of part of Norman architecture, but it has undergone repeated alterations and repairs. St. John's, near the west gate, is a large cross-church, chiefly of early English character, with a square embattled tower. It contains a large crypt, and a fine east window, but the church, near the centre of the town, is a modern edifice of Gothic architecture, with a steeple 202 feet high. The interior is an ellipse 80 feet by 60. St. Ann's chapel is a plain building, with a light steep, on the east side of the town. It was erected in the Magdalen Meadows, near Barras Bridge, on the north road, in place of a chapel near the Tyne Bridge, now pulled down, is a beautiful building in the English style, with a lofty tower. There are a number of dissenting places of worship in Newcastle, and other places.

The town and county gun is a massive stone building of modern erection, large and commodious, and admitting the requisite number of men. A portion of it, the Great Castle, in part of the precincts of the antient castle, is a building of elegant proportions, adorned with a fine portico of six Doric columns on the south front, and a similar portico of four columns on the north front. The architectural details are from the temple of Theseus at Athens. A portion of the old castle, which was formerly used as a county prison and for holding the assizes, is yet standing; many alterations have been made within the last twenty or thirty years, but by no means in harmony with the original architecture of the building. The walls have a thickness varying from 14 to 17 feet.

The Infirmary is a commodious and handsome building in the Westgate township: the institution is well managed, and all requisite accommodations for the patients are provided. The present building was erected 1829-35. Amongst the objects of the Literary and Philosophical Society are the rooms and museums of the Natural History Society of Northumberland, Durham, and Newcastle, and of the Antiquarian Society of Newcastle. There are a handsome theatre, assembly-rooms, and an elegant collection of paintings, and a number of public libraries. The town is also adorned with many monuments and statues; those of Literary Productions; the National Institute of the Arts and Sciences; and those of the Philosophical Society, and of the Nautical Institution are in the town. There are extensive barracks, enclosed within a stone wall, north-west of the town. The royal arcade, an extensive pile of building, lately erected, is occupied by banks and offices. Several streets in the town have been formed of late years near the suburb o' the town.

The commercial importance of Newcastle arises from its situation on a river navigable thus far by sea-borne vessels, and from the advantages of a good port, which is under the care of the corporation. The river side is lined with warehouses and extensive quays. The chief business is in the shipment of coals, the produce of the surrounding coal-pits. The coals are brought down the river in broad flat-bottomed boats, or barges, called keels, or laden with keelmen. The yearly export of coal in the ten years ending with 1832 averaged above 700,000 chaldrons sent coastwise, about half, to London; the export over sea to the different countries of the Continent rose from about 45,000 to about 76,000 chaldrons in the same period. The greater part was 1,921,894 tons; in 1834, 2,017,642 tons; in 1835, 2,261,401 tons; in 1836, 2,260,713 tons; in 1837, 2,392,494 tons; and in 1838, 2,450,778 tons; the exports to foreign countries were 1,419,849, 476,157, and 554,175 tons respectively. The other chief articles of export are lead, the trade in which has much increased; cast and wrought iron; glass and pottery, copperas and other chemical productions; soap, candles, and pulped paper. The imports to the town are wine, spirits, licorous liquors, and fruit from the south of Europe; corn, timber, flax, tallow, and hides from the Baltic; and tobacco and various other articles from North America. The gross receipts at the custom-house for the financial year 1832-3, were 307,274 19. 3d., 413,766 17. 6d., and 379,359 18. 6d. respectively; the net receipts of the same years were 293,057 7. 4d., 36,533 28. 6d., and 361,311 8. 5d. These receipts were not exceeded by those of any other port on the Tyne, excepting that of the town of Newcastle, and Hull, in England; and by Greenock, Leith, and Glasgow, in Scotland. The number of ships which entered the port in the years 1832-8 was as follows —
Three or four vessels are sent every year to engage in the Davis's Strait whale-fishery. The salmon-fishery on the river has much declined. A number of steam-boats ply between New York and New Bedford.

The chief manufactures are of glass-bottles and plate and crown glass, chiefly carried on in the township of Byker; this manufacture employed, in 1831, 330 men. The manufacture of steam-engines, mill-work, and other machinery employed, from 130 to 140 men in 1811, and the different branches of the manufacture of leather, about 200 men. A number of persons were engaged in ship and boat building, block, mast, and sail making, flax-drying, rope-making, coaling, building, &c. There are several malt-mills, breweries, flour-mills, to agree the permissions, and iron and lead-works, and chemical works. The lofty chimneys of these last, rising from 150 to 300 feet, form a striking feature of the town, and from the flatness of the surrounding country are seen from a distance of ten miles. There are several yearly fairs for woolen cloth, hardwares, leather, horses, and cattle. There are rail-roads from Newcastle to Carlisle, to North Shields, and to South Shields and Sunderland. Parliamentary sanction has been obtained for a railway from Newcastle to York. A Chamber of Commerce has been established for many years.

By the Municipal Reform Act, the borough was directed to be divided into seven wards; the corporation to consist of four aldermen and forty-two councillors; by the revising of the borough in 1838, the number of wards was fixed at eight, but the alteration was not approved by the king in council. The revenue of the corporation averages from 30,000/ to 35,000/ per annum; the principal sources of the revenue are rents (about 9000/), a duty on coal bricks, coal-burnt, and paper are made. Thirty years ago, the bricklayers' and Slater's labourers were chiefly females.

The inland trade of the town is considerable: there are three fish markets, Tuesday and Saturday: the corn-market is a very important one; the market for wheat and rye, and that for oats, are held in different places; there is a handsome and commodious fish-market under the merchants' court, and large and commodious markets for butcher's meat and vegetables have been lately erected. There are several yearly fairs for woolen cloth, hardwares, leather, horses, and cattle. There are rail-roads from Newcastle to Carlisle, to North Shields, and to South Shields and Sunderland. Parliamentary sanction has been obtained for a railway from Newcastle to York. A Chamber of Commerce has been established for many years.

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adjacent; but this connection has been gradually diminishing of late years, much to the detriment of Newcastle. A still more serious loss to the town has arisen from travellers being now nearly altogether diverted from it to the Grand Junction Railway.

There is a branch canal from this town to the Grand Trunk (or Trent and Mersey) Canal, which passes through the town; and several canals, both of the coal-mines in Apedale, which affords a supply of coals to the town at a cheap rate.

The corporation, under the Municipal Reform Act, consists of six aldermen and eighteen councillors. The borough, by the termination of the municipal boundaries, was made coextensive with the parliamen
tary boundaries, which had been somewhat enlarged by the Boundary Act. The borough has a commission of the peace, and a court of sessions, which is held at Town Fields, and a coroner's court, held quarterly. The corporation revenues are about 6000l. per annum, a sum which is inadequate to meet the annual expenditure of salaries, rent charges in satisfaction of charitable bequests, &c.

Newcastle has returned members to parliament from Edward III., and probably from an earlier date. The constituency, previous to the Reform Act, consisted of the resident freemen; the number was about 800. The number of houses, in 1831, assessed at 10l. annual value, was 367. The number of persons before his first admission to the franchise was 106.

Amongst other privileges, the burgesses have an exclusive right of pastureage on about 205 acres of fertile land, divided into four large fields, which were allotted to them under the Enclosure Act of 1816, in lieu of their ancient right to pay the tithe of the pastureage and to mend and repair the roads and ditches of the town. At the same time five acres, bordering the town on its eastern side, were set apart for public walks, together with funds for their support, and are now planted and laid out in an ornamental manner, to the great advantage of the town.

The living is a rectory, of the clear yearly value of 285l., with a glebe-house, built in 1699.

There were, in 1833, in the borough, an infant-schdol, with 100 children; an endowed free grammar-school; four other schools, which were supported by endowment, with 116 children; nineteen other day-schools, with 499 children; one boarding-school, with 43 children; one national day and Sunday school, partly supported by endowment and partly by subscription, with 408 children in the week, and 225 on Sunday; and five Sunday-schools, with 1106 children.

A Lancasterian school has been opened since these returns were made. There are a theatre; a permanent Book Society, established in 1815, having a library of upwards of 1500 volumes; and a Literary and Scientific Institution, founded in 1836, which also possesses a library. (Communication from Newcastle-under-Lyme.)

NEWCOME, WILLIAM, born 1739, died 1800, one of the eminent divines of the eighteenth century belonging to what has been termed the school, to which are assigned, in a general sense, the names of Law, Paley, and many others belonged. The scene of his labours lay for the most part the active period of life in Ireland, where he attained the highest dignity in the Church, being appointed archbishop of Armagh during the short administration of Earl Fitzwilliam in 1793.

His father was a clergyman at Abingdon, and he was educated at the grammar-school in that town, from whence he passed to the university of Oxford, where he became in due time a Fellow and tutor of Hertford College, where he had many scholars. He was instituted rector of St. John's, Archdale, became Doctor in Divinity, and in that year accomplished his patron, the earl of Hertford, when he went lord-lieut
ee to Ireland. He went as chaplain, and a bishopric in that country soon falling vacant, he was placed in it: he was afterwards bishop of Meath. Early in life, it is not extraordinary that he had several translations, which were first to Oscory, then to Waterford, and finally to Armagh. A writer of some account of his life assures us that he 'diligently and faithfully discharged the duties of his episcopal office, and secured the respect of all parties and of all religious persuasions by the affability, prudence, candour, and moderation which were the invaluable guides of his conduct.'

But the best praise of this eminent prelate is, that he was during the whole of his life a most assiduous biblical student, and that he did not suffer those studies to end in themselves, but laid before the world results which ensued upon them. He did not begin to lay these results before the public till he had maturely considered them, for he was sixty-five before he printed and at the absolute extremity of his life; but when he had begun, he showed that it was his great object to promote the knowledge and study of the Scriptures. His first work was 'The Harmony of the Gospels,' a work the title of which affords but an inadequate idea of its nature and importance. By these achievements, he made the most difficult and important part of sacred history to be a branch of study, and at the same time to contain a mass of valuable criticism and useful information. Out of this work arose a controversy with an acute antagonist, Dr. Priestley, on the duration of the m"
At mid day it is frequently very hot, and even oppressive; but in the mornings and evenings, and at night, the air is exceedingly agreeable. The most disagreeable periods are the setting-in and the breaking-up of the winter, and especially when the great islands of ice appear off the coast.

The soil is not ten inches deep above the forest, but it has hitherto been attempted only on a moderate scale. At the heads of the bays and along the lower course of the rivers there are many tracts of alluvial soil, which, with some outlay, could be converted into meadows, and if drained of the water which comes when the snow dissolves, would yield good barley, oats, and potatoes. In many parts there is rich pastureage. Trees of any considerable size are only found within the bays, near the water, and along the rivers. On the Atlantic coast there is little woodland, and the building is kept for fuel. The islands of the south coast of Labrador, and the Great Bank. The salmon, herring, and mackerel are also taken. Coal, gypsum, and limestone are found in several districts, especially on the western coast, near St. George's Bay.

A Chippewayan is a native tribe, the Micmac, who also occupy the peninsula of Gaspe, in Lower Canada, and extend into New Brunswick. The northern districts were formerly occupied by another tribe, called the Red Indians; but notwithstanding the continuance of the trade for many years, not one individual belonging to this tribe, none have been found, and it seems that the tribe is entirely extinct. The European settlers, all of whom are employed in the fisheries, are established on the coast, and especially on the peninsula of Avalon, which is connected to the mainland by a low isthmus little more than three miles wide. This isthmus separates Trinity Bay from the bay of Placentia. The settlements on the other coasts are few and at a considerable distance from one another.

The port and town of St. John's is on the east side of the island. The entrance of the harbour is so narrow, that two large ships can hardly pass abreast with safety. There are twelve feet water in the middle of the channel. The harbour is covered, and sheltered from all sides by the rocks: its fortifications are rather strong than extensive.

The town runs along nearly the whole of the north side of the port, but there can scarcely be said to be more than one street, the others being irregular lanes. A few of the houses consist of stone or brick, and are handsome, but the greater part are of wood. The public and government buildings are tolerably extensive. The population in summer hardly exceeds 10,000, but on the return of the fishermen it is increased to 15,000. Harbour Green, the next town in importance, has a population of 5000; it is situated on the western shores of Conception Bay, and the harbour is safe, but rather intricate. The other settlements are small, and chiefly consist of a few wooden houses.

The Great Bank of Newfoundland is the most extensive submarine elevation that is known to exist in any ocean. It is about 600 miles long, and in some places 200 broad. The soundings on it are from 25 to 93 fathoms. The whole appears to be a mass of solid rock; its edges are abrupt, and deepen suddenly from 25 to 92 fathoms. The shallowest parts are the Cape Race, or Virgin Rocks; although there are about four fathoms on the shallowest parts, yet during a heavy sea a ship would be immediately dashed to pieces on them. The best fishing-grounds on this bank are between 47°42' and 47°56' N. lat. The Outer and Great banks are a continuation of the Great Bank at a lower elevation. It lies between 44°19' and 45°24' W. long. and 44°10' and 47°30' N. lat. The soundings on it vary from 100 to 150 fathoms. Between the Outer and Great Bank the soundings range from 10 to 21 fathoms.

From the Great Bank to Nova Scotia there is a continuation of banks. The temperature of the water on the Great Bank is from 10 to 12 degrees colder than that of the surrounding sea; and when it comes into contact with the warm waters of the Gulf-stream, at its southern extremity, the difference amounts to 16 or 18 degrees. It is supposed that the fog which generally hangs over the banks, and hovers along the coasts of Nova Scotia, Cape Breton, and Newfoundland, and also heavier fogs on the west coast of Europe, are induced by the contact of the warm waters of the Gulf-stream with those which are brought down from the polar regions by the prevailing north-east winds.

The first discovery of Newfoundland is due to some Norwegians, who, after having been engaged in the Greenland whaling trade, returned by a voyage of discovery from Greenland, and visited various parts of North America. Indeed it seems pretty well established that during the tenth and eleventh centuries the Northmen discovered and visited a great part of the eastern coast of what is now the United States, and that the island of Newfoundland however seems to have been forgotten until its re-discovery, on the 22nd June, 1497, by John Cabot, and then in the service of England. The name Newfoundland was given by Cabot to the whole of the territories discovered by him, not to the island alone.

Cabot, on his return to England, having reported the great abundance of fish discovered on the coasts of Newfoundland, many English adventurers and adventurers, of the same name, were induced to come over to the spot; and it appears that so early as the year 1498 the fishery was carried on by Portuguese, French, Bajan, and other nations, on the banks or shores, and on the coast to the east and south of the island of Newfoundland. As the great herring, bears, otters, red foxes, martens, and hares, and profitable trade was carried with the Indians for the skins of these animals, which were shipped to Europe. No attempt was made to form a settlement until 1624, when Lord Raleigh, who sailed the island, and restored to England the fisheries, and which they are now occupied by a few people, and the island, which he called Avalon, and appointed his son the governor.

The nature of Sir George Calvert's title does not appear. Soon after the formation of the colony, he proceeded thither, in order that he might freely enjoy the privileges of the Roman Catholic religion. Ten years after exploring the Great Bank, he returned home, and was sent from Ireland by Lord Fulkland, then lord-lieutenant of that part of the kingdom; and in 1634 Sir David Kirk went there with a few settlers, under the authority of a parliamentary grant. The French had also a settlement in Placentia, and a trade and traffic between themselves and the English settlers. The permission of the French colony was conferred on a mas- service of the English government, in which the French fisherfolk for some time paid a tribute of five per cent. on the value of the fish taken. This payment was relinquished by Charles II. in 1663, and the French fishery thereupon increased rapidly. In the declaration of war against France issued by William III. shortly after he was called to the throne of England, it was included as one of the rights of England, since the French took licences from the governor of Newfoundland to fish upon that coast, and paid a tribute for such licences, as an acknowledgement of the sole rights of the crown of England to that island; but of late, the encreations of the French upon that island, and their jery's subjects, trade, and fishery, there had been more like the invasion of an enemy than becoming friends, who en joyed the advantages of that trade only by permission.
During this war, and in that which followed, considerable damage was done by the French and English forces to the settlements of their respective countrysmen on Newfoundland. In 1705 the French attacked and nearly destroyed the town of Saint John, and succeeded in obtaining possession of it nearly every year since; but at the treaty of Utrecht the island was declared to belong wholly to England, the French being allowed to fish under certain regulations, and to occupy the small islands of St. Pierre and Miquelon at the entrance of Placentia Bay, but a garrot of only 50 men was allowed to be kept in each. The subject of fishing rights on the shores and banks of Newfoundland has since been the cause of some disagreement between the English and French governments, and at this time (1839) is far from being placed on a satisfactory footing: but the sovereignty of the island as settled by the treaty of Utrecht has remained undisputed.

The population of Newfoundland has always been very fluctuating. The sole inducement to settlers is offered by the fisheries, for the prosecution of which many persons take up their abode on the island only during the fishing season, and leave it during the winter. By a census taken in 1763 it appeared that the number of inhabitants was then 13,112 of both sexes and all ages. The population in 1806 was estimated at 26,500. A census has since been taken in each of the years 1823, 1828, and 1836, showing the following results:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>1823</td>
<td>31,746</td>
<td>16,270</td>
<td>15,476</td>
</tr>
<tr>
<td>1828</td>
<td>34,611</td>
<td>17,763</td>
<td>16,848</td>
</tr>
<tr>
<td>1836</td>
<td>41,467</td>
<td>20,922</td>
<td>20,545</td>
</tr>
</tbody>
</table>

The population in the several districts in 1836 was as follows:

<table>
<thead>
<tr>
<th>Districts</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saint John</td>
<td>10,239</td>
<td>8,687</td>
<td>18,926</td>
</tr>
<tr>
<td>Conception Bay</td>
<td>12,562</td>
<td>10,373</td>
<td>23,165</td>
</tr>
<tr>
<td>Trinity Bay</td>
<td>3,761</td>
<td>3,662</td>
<td>7,423</td>
</tr>
<tr>
<td>Bonavista Bay</td>
<td>2,808</td>
<td>2,255</td>
<td>5,063</td>
</tr>
<tr>
<td>Fogo</td>
<td>2,131</td>
<td>1,366</td>
<td>3,497</td>
</tr>
<tr>
<td>Ferryland</td>
<td>3,330</td>
<td>1,781</td>
<td>5,111</td>
</tr>
<tr>
<td>Placentia and St. Mary</td>
<td>2,644</td>
<td>2,057</td>
<td>4,701</td>
</tr>
<tr>
<td>Burin</td>
<td>1,775</td>
<td>1,365</td>
<td>3,140</td>
</tr>
<tr>
<td>Fortune Bay</td>
<td>1,657</td>
<td>1,272</td>
<td>3,129</td>
</tr>
</tbody>
</table>

The produce of the fisheries at different periods will show the increasing importance of this colony. In 1763 there were taken and cured 369,274 quintals of codfish and 694 tiers of salmon. There is a further exportation of 139,406 quintals of cod and for the value of about 2000L. In 1795 the fishery employed 400 sail of ships, of the aggregate burthen of 35,000 tons. The produce was 500,000 quintals of codfish, 3700 frailts of salmon, 1000 barrels of herrings, 3300 tons of cod and haddock oil, and 4900 seal skins of the value of 2000L. In 1818 the produce was 860,334 quintals of codfish, 1534 barrels of herrings, 1847 tiers of salmon, 354,321 seal skins, and 9453 tons of cod, seal, and whale oil, the value of the whole being 392,000L.

The inhabitants are in a great degree dependent for provisions upon importation. Salt provisions are sent from Ireland and Germany; large quantities of biscuit are also sent from France. Flour is imported from the United States and Germany. In 1836 there were 3000 chests of flour, 10,000 bushels of oats, 1,168,127 bushels of potatoes, and 6,975 tons of hay. The number of horses in that year was 1531, of horned cattle 5835, and of sheep 3103. The number of shipping that arrived at and departed from the colony in that year was as follows:

<table>
<thead>
<tr>
<th>Countries</th>
<th>Ships</th>
<th>Tons In</th>
<th>Ships</th>
<th>Tons Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Britain</td>
<td>196</td>
<td>26,646</td>
<td>145</td>
<td>18,546</td>
</tr>
<tr>
<td>British Colonies</td>
<td>323</td>
<td>29,718</td>
<td>376</td>
<td>24,144</td>
</tr>
<tr>
<td>United States</td>
<td>39</td>
<td>5,720</td>
<td>18</td>
<td>2,157</td>
</tr>
<tr>
<td>Foreign States</td>
<td>22</td>
<td>36,746</td>
<td>246</td>
<td>35,710</td>
</tr>
</tbody>
</table>

Total | 900 | 98,830 | 785 | 95,557 |

The total value of imports in 1836 was 357,799L., and of exports 787,099L.

NEWFOUNDLAND DOG, a well-known and fine variety of the dog, seldom seen in a state of purity, when it is comparatively small, but very muscular and strong, and generally black. The large, and, it must be confessed, handsome dogs, which are so often seen in this country, and pass for Newfoundland Dogs—"Dogs"—it is Col. Hawker, if we recollect right, who so designates them—"as big as a jackass"—and are, in truth, very unlike the original pure dogs, which, in their native country, are employed in drawing sledges and little carriages laden with wood, fish, or other commodities. Some of these true Newfoundland Dogs we have seen, and think them admirable as guard dogs, and a heavy gallop a ship has also seen the great and less pure English Newfoundland Dogs, so to speak, employed in the field for the same purpose with great success. One of the leading qualities of both, when so broken in, is the gallant manner in which they will face the water when dropping, and they are not less as a rule ad orientem, or down the wind, in pursuit of the lost object. Whether it be fever, bramble, or blackthorn, in they dash, and almost always persever to till they have recovered the lost piece of game. As water-dogs they are above all praise. Their zeal, their devotedness, their entire abandonment of self when they rush to the rescue of some drowning wretch, are admirable; to be sure, in their eagerness to save, they sometimes enumerate those with help who do not need it; and there have been instances where they have nearly perished by their kindness. Directly they see anybody, or indeed any animal whatever, struggling in the water, they jump, and seem to think that it is their duty never to leave them till they have got them out. They have been employed most successfully in the work against the most heavy sea; not always with success however. There is a case on record where the compact frame and indomitable courage of a bull-dog succeeded in carrying him through breakers which proved fatal to the Newfoundland Dogs. During a heavy gale a ship had struck on a rock near the land. The only chance of escape for the shipwrecked was to get a rope ashore, for it was impossible for any boat to live in the sea then running. There were two Newfoundland Dogs and a Bulldog on board. One of the Dogs at the instant a rope tied round him, and perished in the waves. The second shared a similar fate; but the Bulldog fought his way through that terrible sea; and arriving safe on shore, rope and all, became the saviour of the devoted people on board.

The Newfoundland Dog is confiding, very sagacious, and capable of the warmest attachment to his master. The attacks of little dogs are generally either coolly looked down upon, as if hardly understood, or completely exempt; but the Newfoundland shows to this lofty behaviour: we saw a harmless and very affectionate pug receive his mortal hurt from one of these dogs, and that without the slightest provocation on the part of the poor little pug. This however was a bad-tempered exception to the general. The Newfoundland Dog, notwithstanding, being pronounced to be as generous as he is brave.

NEWHAVEN. [Sussex.]

NEWHAVEN. [Connecticut.]

NEWMARKET is a market town, situated principally in the county of Suffolk, though some part, including the whole of the race-course, is in Cambridgeshire. Its direct distance from London is 55 miles north-north-east, and from the town of Cambridge 12 miles west. The main street is long and wide, and is lined with buildings, many of which, being old-fashioned, display some ancient architecture. There is a lofty waterscope running directly through the heart of the town. The houses for the most part are modern and well built. The greater part of the town was destroyed by fire in 1623, and again in the early part of the last century. The destruction of property occasioned by fire was estimated at 29,000L. Horse-racing does not appear to have been introduced here till about the close of the sixteenth century, when some of the horses which had escaped from the wrecks of the Spanish Armada are said to have been exhibited here, and to have carried off many of the horses of the inhabitants by their extraordinary swiftness. Soon after the accession of James I. to the English throne horse-racing became a fashionable diversion, and a house was erected at Newmarket for the accommodation of him and his court. This house having been much injured during the civil war, in-
Newport was in the possession of William Fitzsimons, a powerful baron and ancestor of the Pagnells, from whom the name Pagnell is derived. During the civil war the town was quarantined by Prince Rupert, but was released on a demand made by a party of the townsmen taken by the parliament, and retained by them during the remainder of the war. Sir Samuel Luke, conjectured to be the prototype of Hubridus, was its governor in the year 1641.

There are four schools, a national and a Lancasterian school, a girls', and an infant school, which are supported by voluntary donations. There is also a foundation for teaching twenty girls to read, write, and work, endowed with 20l. Dr. Wraxall and the late Lord Byron, the latter a native of the town, were educated at an endowed school for girls, supported by Mrs. Van Hagen. There is a Mechanics' Institution; and an academy, supported by the dissenters, for the education of young men for the Christian ministry. The principal charities of the place are the weekly dole of oatmeal for the paupers, the alms-house, and the school for girls, supported by Mrs. Van Hagen.

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Newport

NEWPORT was formerly paid annually by the Exchequer to the parochial authorities, under a donation, as it is understood, of Queen Anne, for the support of charity-schools at Newport, but it was withdrawn about three years ago. After deducting 8l. 15s. for office-fees, the residue was equally divided between the master and mistress of the national school, who are appointed by the rector of St. Mary's, and was also afforded to the trustees of the infirmary, and the like number of girls. The school is now supported by voluntary contributions, and 72 boys and 63 girls are educated according to the principles of the established church, the number on Sunday being increased to 91 boys and 53 girls.

The other charities of Newport, which are numerous, though of small amount, are mentioned in the 'Twenty-second Report of the Charity Commissioners,' pp. 173-5. (Hospitals of England; Population Return.)

NEWPORT is a market-town in the parish of Newport Pagnell, hundred of Newport, and county of Buckingham; 12 miles north-east by east from the town of Buckingham, and 45 miles north-west by north from London. It is situated on the junction of the rivers Ouse and Ousel, by the latter of which it is divided into two unequal parts, and over which there is an elegant iron bridge, erected in 1810. The streets are ill paved, and only occasionally lighted with gas. The water for the use of the inhabitants is taken from the late fifty yards supplied by means of machinery from the Ouse, but is now derived from a town pump situated in the High-street. The parish church has lately undergone thorough repair. It is a spacious and handsome structure, dedicated to St. Peter and St. Paul, and stands upon an eminence from which there is a fine view of the surrounding country. The living is a vicarage in the diocese of Lincoln, and in the gift of the crown, with a net annual income of 250l. There are in the town three public houses, an alehouse, a tavern, and a lodging-house. The Poor-mill, or chapel-of-ease, formerly the parish church; two Catholic chapels, one of which is considered to be the diocesan chapel of the Catholic bishop of Dromore; a friary, which is also a place of worship; and another chapel, the Independent college of Manstown; two Presbyterian meeting-houses, one of which is inhabited by a man of some other dissenting places of worship; a barrack for 74 men; and an hospital capable of accommodating 30 or 40 patients.

There are at Newport iron-foundries on an extensive scale, and forges for making shovels, spades, and other iron goods, flint-glass and cordage are manufactured, and there are $15 and about the town a distillery and several flour or oatmeal mills. The trade of the town is great, and it has lately much increased, especially in the export of grain and the import of timber; it communicates with Carlisle by
are miles distant, by a ship canal, and with Lough Neagh by a boat canal, both parallel or nearly so to the river at that part of their course which is near the town. Lower down the ship canal opens into the river, by the bed of which it communicates with the bay; and the boat canal unites with the river Bann, by the bed of which it enters Lough Neagh. On the east side of the canal is a line of quays with warehouses; and northward from them is a road to Gilding's Bridge, rather than the town. The gross receipts of duties at the custom-house were in 1836 more than 58,000l. The chief trade of the port is with Great Britain. Irish produce, especially corn and cattle, and Irish manufactures, are sent to Liverpool and Glasgow; the importation of goods at St. Paul's Head is immense; sugar, salt, British hardware, and other manufactured goods. The chief foreign trade is with the United States and British North America, the Mediterranean, Odessa, the Baltic, and Archangel. The canal is navigable by steamers from Liverpool and Glasgow. The steam-boats do not go up to Newry, but to Warren Point, about six miles below, where also the larger trading vessels discharge their cargoes. A great number of labourers embark at Newry for the harvest in England, and few come down with the return, or by their labour in England. There are markets on Tuesday, Thursday, and Saturday; the first is for grain, the last is for meat. There are two yearly fairs.

Newry was incorporated 19th James I. The corporation has never since met; but it has retained the privilege of returning two members to parliament up to the Union, when the number was reduced to one. It was, before the Reform Act, a scot and lot borough. The number of voters, 5, (Irish), 15, (English), was in 1824, 15; and in 1832, 7, but the former class of voters will be allowed to become extinct on the death or removal of those who at present possess the suffrage. The seneschal of the manor of Newry is the returning officer.

It is a large and well held semicircular manor, having jurisdiction in suits under 100 marks. Quarter sessions for the Newry division of the county of Down are held here twice in the year; quarter-sessions for the county of Armagh are held twice in the year in that part of the town which is in that county. All other Armagh sessions are held weekly. The police force consists of detachments of the constabulary of the two counties. The parish of St. Mary, Newry, is a donative in the gift of the Earl of Kilmorey, who is the proprietor of the tithes, and exercises (as lay abbot, or representative of the former abbot of a Cistercian abbey, which existed in the town prior to the Reformation), episcopal jurisdiction, holding ecclesiastical courts and granting probates of wills and licences for marriage, subject only to the jurisdiction of the archbishop of Armagh and the vicar. The vicarage is endowed by the Earl of Kilmorey with 400l. per annum, but the net revenue is diminished to one half by the payment of curates' salaries. There is no glebe-house. The church and chapel-of-ease are attended by about 1100 persons, chiefly by 2500 persons, chiefly in the evening. There are several schools, most of which are aided or supported by endowments or donations.

NEWSPAPERS. Some persons are of opinion that the origin of newspapers may be traced to the 'Acta Diurna' of the Romans. [Acta Diurna.] However they may have arisen, the practice of printing at all approaching to the nature even of the 'Acta Diurna' existed in modern times. The war which the Republic of Venice waged against the Turks in Dalmatia gave rise, in 1563, to the custom in Venice of commanding military and commercial news by written sheets, which were read in a particular place to those desirous to hear them, and who paid for this privilege in a coin no longer in use, called grauzetta, a name which, by degrees, was transferred to the newspaper itself, and the language printed in it. [2] The Venetian government eventually gave these announcements in a regular manner once a month; but they were too leisurely to allow them to be printed. Only a few written copies were transmitted to various places, and read to the public. Numerous descriptions of newspapers exist in the Magliabechian library at Florence.

It is to England, or rather to Lord Burghley, the able minister of Queen Elizabeth, that the honour of commencing printed sheets of public intelligence is now generally ascribed. The earliest of those which remain copies are preserved among Dr. Birch's Historical Collections in the Spanish Armums, No. 4106 relate to the descent of the Spanish Armada upon the English coasts; but those are numbered 50, 51, and 54, in the corner of their upper margins, it has been not improbable concluded that a similar mode of publishing news had been resorted to considerably earlier. The event, though, as far as we know, none of the papers have been preserved by the English Mercureius; published by authority for the contradiction of false reports, was the title of these papers, and the last number contains an account of the queen's thanksgiving for the victory. The English newspaper gained over the enemies of England. It is probable that when the great alarm of the Armada had subsided, no more numbers were published. It must not however be concealed that doubt is entertained of the genuineness of these papers. Two of them are not of the time, but printed in modern type; and no original are known: the third is in manuscript of the eighteenth century, altered and interpolated with changes in old language such only as an author would make.

From the time that 'The English Mercureus' (if genuine) was given up, we find the continued publication of intelligence with a fixed title in England for many years. In the reign of James I, packets of news were published in the shape of small quarto pamphlets occasionally. The earliest of these packets included in the series of newspapers purchased by Dr. Burney's library (also in the British Museum), is entitled 'News out of Holland,' published in 1619 for N. Newbery, followed by other packets of news from different countries in 1620, 1621, and 1622. There have been no new publications of these. In 1622, when the Thirty Years' War and the exploits of Gustavus Adolphus excited curiosity, those occasional pamphlets were converted into a regular weekly newspaper, entitled 'The News of the Present Week,' edited by Nathaniel Wraxall. This seems to have been the first weekly newspaper in England.*

About this period newspapers began also to be established on the Continent. Their originator at Paris is said to have been a man named Buffetaut. He published at his own expense a paper for about five years, and then succeeded to the business of a man named Malcolm, who had died, and the new editor, who somewhat conduced to his success in his profession to be able to tell his patients the news. Seasons were not always sickly, but his taste for collecting news was always the same, and he began to think that there might be some advantage in printing his intelligence periodically. His scheme succeeded, and he obtained a privilege for publishing news in 1632. It would appear that not long after this time there were more newspapers than one in England.

Upon the breaking out of the civil war in Charles the First's time, great numbers of newspapers, which had hitherto been chiefly confined to foreign intelligence, were spread abroad by the different parties into which the state was then divided, under the titles of 'Diurnals,' 'Special News,' 'Intelligencers,' 'Mercurius,' &c., many of them of the size of small quarto pamphlets, and of various matters. Nearly a score are said to have come out in 1643, when the war was at its height. Heylin, in the address prefixed to his 'Cosmographie,' enjoins the reader not to think himself uneasied in his expectation, if he find not in it 'the situation and affairs of each town of war or the quarrelling-place of every company or troop of soldiery, which are presented to him in the weekly news-books.' Hence we find some papers entitled 'News from Holland,' 'News from the North,' 'The English News,' 'News from Chichester, Winchester, Windsor, Chester, &c., and others too numerous to mention. We also find 'The Scots Dove' opposed to 'The Parliament Kite,' or 'The Secret Owl.' Keener animosities, as D'Israel remarks, give rise to keener titles: 'Hereditatis Ridens' was met by 'Democritus Ridens,' and 'The Weekly Discoverer' was shortly met by 'The Discoverer Stript Naked.' 'Mercurius Britannicus' was grappled by 'Mercurius Maior' from which all Scots, Britons, &c., were excluded, and its favourite name, with another word to indicate the character of the party from which it emanated. Whenever any title however grew popular, it was stolen by the antagonist, who

* Before the introduction of printed newspapers, it appears that great families had their own sort of gazetters in London, to which they subscribed, and which were published in written letters. This custom accounts for the following memorandum preserved in the Clifford family, and written by Daniel Robinson, by my lord's command, for writing letters of news to his lordship for half a year, five pounds. (Witaker's Hist. of Great Britain.)
thus conveyed his opinions to those who would not have received them had he not worn the appearance of a friend. In his "Conquest of Literature," give an account of the two principal persons who were at this time concerned in the newspaper press, Marchant Needham and Sir John Berkenhout. "Marchant Needham," he says, "the great patriarch of newspaper writers, was a man of versatile talents and most versatile politics, a bold adventurer, and most successful because the most profligate of his tribe. From college he came to London; an usher in Merchant Taylors' school; then an under-clerk in Gray's Inn; at length studied physic and practised chemistry; and finally, till his death, a gentleman and a courtier. In the words of Antony à Wood, "sitting with the rout and scum of the people, he made them weekly sport by railing at all that was noble in his intelligence, called Mercure Britannicus, wherein his endeavours were to sacrifice the fame of some lord, or any person of quality, and of the king himself, to the beast with many heads." He soon became popular, and was known under the name of Captain Needham of Gray's Inn; and whatever he now wrote was deemed oracular. But whether from a sweet imagination for aspersions, Charles I., or some pique with his own party, he requested an audience on his knees with the king, reconciled himself to his majesty, and showed himself a violent royalist in his "Mercure Frangais," and called the Presbyterians with him. Some time after his party prevailed, he was still further enlightened, and was got over by President Bradshaw as easily as by Charles I. Our metrical writer became once more a virulent Presbyterian, and lash'd the royalists outrageously in his "Mercure Britannicus," and marred the reputation of the presbyterian party then prevailing. At last, he was not so much in danger of the halter, once more he is said to have fled into Holland, waiting for an act of oblivion. For many years Needham obtained a pardon under the great seal. He latterly practised as a physician among his party, but lived universally hated by the royalists, and now only committed harmless trespasses with the College of Physicians, on whom he poured all that good sense he was incapable of, and, as much as," said Warton, from flowing through its natural channel. In buffoonery, keenness, and boldness, Sir John Berkenhout, the other principal news-writer of the day, was not inferior, nor was he at times less an adventurer than Needham. His "Mercure Anglais," was devoted to the court, and his "Gazette," Beside newspapers, he was the author of numerous small political pamphlets abounding in wit and satire.

In 1693 the Kingdom's Intelligence was commenced in London, which contained a greater variety of useful information than any of its predecessors. The obituary, notices of proceedings in parliament and in the law courts, &c. Some curious advertisements also appear in its columns. In 1685 another paper, called the "Intel- ligence," for the satisfaction of the common sort of people, was started by Roger (afterwards Sir Roger) L'Estrange, who warmly espoused the cause of the crown on all occasions, and infused into his newspapers more information, more entertainment, and more advertisements of importance than were contained in any succeeding paper whatever previous to the reign of Anne. L'Estrange continued his journal for two years, but dropped it upon the appearance of the "London Gazette," first called the "Oxford Gazette," owing to the earlier numbers being issued at Oxford. The paper was founded by the print- ing and selling of a weekly paper, called the "London Gazette," by a gentleman of that name, in 1758. This paper was the vehicle through which James's "Letters" were given to the world. The "St. James's Chronicle" is another of our oldest papers; at its first publication it was an amalgamation of two papers (the "St. James's Post" and the "St. James's Examiner") which began in 1715. The "North Briton," edited by Wilkes, first appeared in 1762; and in the same year the "Englishman" was established. The "Englishman," attracted much notice about 1766, on account of the insertion of several satirical articles in it by Burke.

The following account of the origin of the newspaper stamp is given by Cooke, in his "Life of Bolingbroke." Queen Anne, in one of her messages to parliament, declared that the idle profession of newspaper men, designing men had been able to sink credit, and that the innocent had suffered; she recommended the House to find a remedy equal to the mischief. In obedience to the Queen's desire, and at the instance of her secretary, the
parliament passed a bill, in 1718, imposing a stamp duty upon pamphlets and publications. At its origin the amount of this stamp was a halfpenny; and it is curious to observe what an effect this trifling impost had upon the circulation of the most favourite papers. Many were entirely discon-
tinued, and several of those which survived were generally united into one publication. The act which imposed this duty: the 7th and 8th. of Anne, c. 15, was applied to 1d. (without any discount), a discount of 25 per cent. being allowed for Ireland. The quantity of letter-press on a sheet of paper bearing a stamp of 1d. is limited to 1530 square inches on one side. If it exceeded 1530 square inches, but does not exceed 1539 square inches, it is ½d.; above 2295, it is 2d. A supplement not exceeding 765 square inches of print on one side published with any newspaper, is chargeable with a duty of ½d.

The title of every newspaper is now printed on its stamp, it having been found that in the returns the stamps entered as used by one paper were frequently used by another; and the stamp returns may now be relied upon as showing the actual circulation of each newspaper.

In 1836, when the stamp-duty was 4d., the total number of stamps issued in the United Kingdom was 26,576,000.

In 1838 the total number of 1d. stamps issued was, in round numbers, as follows:

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>28,600,000</td>
</tr>
<tr>
<td>English prov.</td>
<td>15,500,000</td>
</tr>
<tr>
<td>Welsh prov.</td>
<td>7,500,000</td>
</tr>
<tr>
<td>England and W.</td>
<td>44,350,000</td>
</tr>
<tr>
<td>Scotland</td>
<td>5,117,000</td>
</tr>
<tr>
<td>Ireland</td>
<td>5,225,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>54,692,000</strong></td>
</tr>
</tbody>
</table>

From the 5th July, 1833, the duty on advertisements was reduced from 3½d. to 1½d. in Great Britain, and to 1d. in Ireland. The following statement of the total number of advertisements, and total amount received therefrom, will show the results of this reduction:

<table>
<thead>
<tr>
<th>Year</th>
<th>British</th>
<th>Ireland</th>
<th>Scotland</th>
</tr>
</thead>
<tbody>
<tr>
<td>1823</td>
<td>760,557</td>
<td>127,122</td>
<td>8,000</td>
</tr>
<tr>
<td>1824</td>
<td>1,105,300</td>
<td>98,660</td>
<td>77,000</td>
</tr>
<tr>
<td>1825</td>
<td>1,125,500</td>
<td>102,900</td>
<td>8,100</td>
</tr>
<tr>
<td>1826</td>
<td>94,447</td>
<td>18,379</td>
<td></td>
</tr>
</tbody>
</table>

The London newspapers are now divided into three classes: the daily, the twice or thrice a week, and the weekly; the daily are again divided into morning and evening papers. The expense attending the establishing and carrying on of a London daily newspaper is very great. To establish a morning paper requiring a capital of not less than 50,000l. is not enough to get that a single individual would hardly venture on such a speculation. It is assumed that capital to the amount of 500,000l. at least is invested in the daily press of London, of which two-thirds, or nearly so, may be represented by morning paper.

Previous to the reduction of the newspaper stamp-duty at the end of 1836, the general price of the London daily papers was 7d.; it is now 5d. Previous to the reduction of the advertisement duty in July, 1833, the lowest price of an advertisement in a London daily paper was 7d.; it is now 2½d.

The ‘Times,’ the largest of the London newspapers, since the reduction of the newspaper stamp-duty at the end of 1836 has issued daily a double paper, that is, eight pages of 19 columns each. The printed area of the whole paper (both sides) is more than 19 square feet, or a space of nearly 5 feet by 4. On a rough estimate it contains about 113,000 words, which is equal to about 70 pages of the ‘Penny Cyclopedia.’ Compared with an average morning paper having a page of print of 3½ by 8½ inches, the area of the ‘Times’ is equal to more than 120 of the 8vo. pages; and, allowing for difference of size in the type, to perhaps 200 of the printed 8vo. pages.

The ‘Times’ is printed by a machine worked by steam-power, each of the 20 sets capable of printing 2500 in an hour perfect, that is, on both sides; so that an impression of 12,500 can be completed in five hours. The paper is generally put to press at five in the morning, at half-past six publication commences, and at ten the whole impression is ready to be issued to the public. Mr. Babbage, after describing the manner in which eight and forty columns are formed into eight pages and placed on the platform of the printing-machine, says, ‘Ink is rapidly supplied to the moving types by the most perfect mechanism: four attendants incessantly introduce the edges of large sheets of white paper to the junction of two great rollers, which seem to devour them with unsated appetite; other rollers convey them to the type already inked, and having brought them into rapid and successive contact, redeliver them to four other assistants, completely printed, by the above machinery.’

Fifteen or sixteen gentlemen are employed by the ‘Times’ for the purpose of reporting the debates in parliament, others are engaged to report the trials in the courts of law, and to report the proceedings of the committees of the two houses. At the House of Lords the members of the House are provided with newspapers, and to furnish accounts of all public meetings of any interest or importance both in London and in the provinces. To show the manner in which the parliamentary proceedings are reported, let us suppose that an important debate is ex-

LONDON NEWSPAPERS.

Daily Morning.

<table>
<thead>
<tr>
<th>Newspaper</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning Advertiser</td>
<td>600</td>
</tr>
<tr>
<td>Morning Chronicle</td>
<td>630</td>
</tr>
<tr>
<td>Morning Herald</td>
<td>615</td>
</tr>
<tr>
<td>Morning Post</td>
<td>820</td>
</tr>
<tr>
<td>Times</td>
<td>11,660</td>
</tr>
<tr>
<td>Public Ledger</td>
<td>334</td>
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35,574 1225

2C2
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<tr>
<th>NEW</th>
<th>196</th>
<th>NEW</th>
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</thead>
<tbody>
<tr>
<td>Daily Evening</td>
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<td>40</td>
</tr>
<tr>
<td>Course</td>
<td>1,273</td>
<td>40</td>
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<tr>
<td>Globe</td>
<td>2,940</td>
<td>50</td>
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<tr>
<td>Standard</td>
<td>3,433</td>
<td>52</td>
</tr>
<tr>
<td>Sun</td>
<td>4,294</td>
<td>40</td>
</tr>
<tr>
<td>Shipping Gazette</td>
<td>1,014</td>
<td>29</td>
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<tr>
<td></td>
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<tr>
<td>Three Times a Week</td>
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<td></td>
</tr>
<tr>
<td>English Chronicle</td>
<td>808</td>
<td>3</td>
</tr>
<tr>
<td>Evening Chronicle</td>
<td>1,176</td>
<td>6</td>
</tr>
<tr>
<td>Evening Mail</td>
<td>1,760</td>
<td>5</td>
</tr>
<tr>
<td>St. James's Chronicle</td>
<td>4,536</td>
<td>31</td>
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<td></td>
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<tr>
<td>Twice a Week</td>
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<tr>
<td>London Gazette</td>
<td>1,538</td>
<td>66</td>
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<tr>
<td>Patriot</td>
<td>2,293</td>
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<td>Record</td>
<td>2,910</td>
<td>70</td>
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<td></td>
<td></td>
<td>6,741 170</td>
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<tr>
<td>Weeky</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>2,317</td>
<td>72</td>
</tr>
<tr>
<td>Atlas</td>
<td>2,692</td>
<td>62</td>
</tr>
<tr>
<td>Bell's Weekly Messenger</td>
<td>17,274</td>
<td>80</td>
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<tr>
<td>Bell's New Weekly Messenger</td>
<td>3,116</td>
<td>36</td>
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<td>Bell's Life in London</td>
<td>20,000</td>
<td>49</td>
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<tr>
<td>Champion and Weekly Herald</td>
<td>575</td>
<td>3</td>
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<tr>
<td>County Chronicle</td>
<td>1,567</td>
<td>53</td>
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<tr>
<td>County Herald</td>
<td>894</td>
<td>27</td>
</tr>
<tr>
<td>Court Journal</td>
<td>1,663</td>
<td>65</td>
</tr>
<tr>
<td>Court Gazette</td>
<td>1,577</td>
<td>13</td>
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<tr>
<td>Era</td>
<td>2,142</td>
<td>10</td>
</tr>
<tr>
<td>Essex, Harts, and Kent Mercury</td>
<td>1,277</td>
<td>35</td>
</tr>
<tr>
<td>Examiner</td>
<td>5,153</td>
<td>80</td>
</tr>
<tr>
<td>Gardener's Gazette</td>
<td>2,711</td>
<td>32</td>
</tr>
<tr>
<td>John Bull</td>
<td>4,346</td>
<td>115</td>
</tr>
<tr>
<td>Liverpool District</td>
<td>3,800</td>
<td>33</td>
</tr>
<tr>
<td>Monitor</td>
<td>4,317</td>
<td>10</td>
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<tr>
<td>Mark Lane Express</td>
<td>3,476</td>
<td>45</td>
</tr>
<tr>
<td>Metropolitan Conservative Journal</td>
<td>2,182</td>
<td>35</td>
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<tr>
<td>Mining Journal</td>
<td>3,165</td>
<td>38</td>
</tr>
<tr>
<td>Naval and Military Gazette</td>
<td>1,474</td>
<td>64</td>
</tr>
<tr>
<td>News</td>
<td>1,942</td>
<td>60</td>
</tr>
<tr>
<td>Observer</td>
<td>5,258</td>
<td>95</td>
</tr>
<tr>
<td>Planet</td>
<td>4,692</td>
<td>7</td>
</tr>
<tr>
<td>Railway Times</td>
<td>1,786</td>
<td>25</td>
</tr>
<tr>
<td>Satirist</td>
<td>2,971</td>
<td>66</td>
</tr>
<tr>
<td>Spectator</td>
<td>3,084</td>
<td>61</td>
</tr>
<tr>
<td>Sunday Times</td>
<td>13,365</td>
<td>114</td>
</tr>
<tr>
<td>United Service Gazette</td>
<td>1,457</td>
<td>62</td>
</tr>
<tr>
<td>Watchman</td>
<td>2,637</td>
<td>43</td>
</tr>
<tr>
<td>Waterford Chronicle</td>
<td>3,327</td>
<td>93</td>
</tr>
<tr>
<td>Weekly Dispatch</td>
<td>51,570</td>
<td>138</td>
</tr>
<tr>
<td>Weekly True Sun</td>
<td>6,336</td>
<td>64</td>
</tr>
<tr>
<td>Total</td>
<td>212,807 1,865</td>
<td></td>
</tr>
</tbody>
</table>

Besides these there are a few weekly journals of a purely literary character, the principal of which are the Athenaeum and the Literary Gazette.

The four papers which are published three times a week, are made up from the columns of four of the daily papers, the advertisements being omitted and a selection made of the most interesting matter. The English Chronicle being bound to the Morning Herald; the Evening Chronicle to the Morning Chronicle; the Evening Mail to the Times; and the St. James's Chronicle to the Standard.

The earliest local provincial newspaper in England is said to have been the 'Norwich Postman,' published in 1706, at the charge of a penny, but 'halfpenny not refused,' followed by the 'Norwich Courier, or Weekly Packet,' in 1714, price three half-pence. Previous to 1720 the 'York Mercury,' appeared, followed in that year by the 'Leeds Mercury,' which still exists. In this year also a 'Leeds Mercury' was established; and about the same time a 'Gloucester Journal.' In 1730 a 'Manchester Gazette' was published. The 'Oxford Journal' began in 1740; a 'Preston Journal,' in 1745, and 'Billinge's Liverpool Advertiser,' in 1746.

In the year 1838 the total number of English provincial newspapers was 240, and of Welsh 10, with a sale of about 15,500,000 for the whole year. They are all weekly papers, with the exception of two or three, which are published twice a week. Some of them have an extensive circulation and a great number of advertisements. The 'Leeds Mercury,' for instance, is as large as the 'Times,' has a weekly sale of 9000, and an average weekly number of 246 advertisements. The Liverpool Mercury has a weekly sale of 6400, and averages about 280 advertisements.

In Scotland the newspaper-press was first introduced during the civil wars in the seventeenth century. When a party of Cromwell's troops arrived in 1642, for the purpose of garrisoning the citadel, they brought a printer, named Christopher Higgins, to reprint a London journal, called 'Mercurius Politicus,' for their amusement and information. The first number was issued on the 24th October, 1653; and in November the following year, the establishment was transferred to Edinburgh, where the printing system was continued till the 11th April, 1660. On the 31st December, 1660, appeared at Edinburgh 'The Mercure Caledonius,' purporting to comprise 'the affairs in agitation in Scotland,' with a survey of the foreign wars. It was a small quarto of eight pages. The last number was dated March 22 to March 28, 1661. It was succeeded by 'The Kingdom's Intelligencer.' In 1669 an 'Edinburgh Gazette' was published by authority, followed in 1705 by the 'Edinburgh Courant.' The 'Edinburgh Courant,' which still exists, was first published on April 28, 1720. After Edinburgh, the next place at which the publication of a newspaper was attempted in Scotland was Glasgow, where the first number of the 'Glasgow Advertiser,' appeared November 11, 1715. 'The Glasgow Journal,' begun in 1729, still exists. An 'Aberdeen Journal, or North British Magazine,' began in 1746; the first number gave an account of the battle of Culloden; this paper still continues. The 'Dundee Journal,' commenced in 1750. 'The Royal Mail' was established in 1797; the 'Dundee Crescent,' 1800; the 'Dundee Advertiser,' 1801; followed by the 'Dundee Chronicle,' the 'Ayr Advertiser,' and the 'Grenock Advertiser,' in 1802; an 'Inverness Journal,' in 1803; and the 'Perth Advertiser,' in 1805. 'The Montrose, Arbroath, and Brechin Review' was established somewhat subsequent to this the 'Fife Herald' was established, and in 1833, the 'Fifeshire Journal.' In 1829 a 'Stirling Advertiser' was instituted, followed by a 'Stirling Advertiser,' both but have been discontinued. Each county in Scotland has also three other country newspapers, viz. the 'Elgin Courier,' the 'Paisley Advertiser,' and the 'Western Independent.' In 1838 there were 64 newspapers circulated in Scotland, of which 16 belonged to Edinburgh. There were no daily papers. The total sale was 3,117,000.

In Ireland, as in England and Scotland, newspaper intelligence originated during civil commotion. As far back as 1641, at the breaking out of the Rebellion of that year, there was printed a news sheet called 'Warranted Fagings from Ireland,' but from that time to the beginning of the eighteenth century, we have no notice of any other print of the kind, although it is not improbable that there may have been some. About the year 1700, a newspaper called 'Pam's Occurrences' named after the pamphlet which was published in Dublin, and maintained itself for more than half a century. This was the first newspaper published in the Irish capital. The next Dublin print was 'Falkoner's Journal,' extant in 1699—both were daily papers. Waterford appears to have followed Dublin in 1700, rushing into being a weekly newspaper in 1729. The establishment of a paper in 1739, entitled 'The Water-ford Flying Post.' In November, 1766, the 'Waterford Journal' came out; and 'Ramsay's Weekly Waterford Chronicle,' at the present 'Waterford Mirror' was started in 1801. The oldest existing newspaper in Ireland is the 'Belfast News Letter' started in 1737. Among the other existing Dublin papers may be mentioned the 'Evening Post,' which has now existed about sixty years. In 1858 there were 84 newspapers circulated in Ireland, of which the total sale was 3,117,000.
which 26 belonged to Dublin. The total sale was 5,225,000.

There are five daily papers in Dublin.

The newspapers of Great Britain have much improved within the last twenty or thirty years. Before that time, few of them contained any original articles or essays beyond occasional or local paragraphs. But all the English newspapers are still too closely linked to the support of some particular political party, or to some particular object; and it is not easy to find in any one of them a full and impartial discussion of any great question affecting the general interests of man and his civic freedom. Several abuse or oblique censure of individuals whose views differ from those of the newspaper writer. In the comprehensiveness of their views, their just estimation of the value of general principles, and in their sober and critical application of them to the solution of the internal and external problems of the community, the best French newspapers have a decided superiority over the English. Some of the French provincial newspapers occasionally contain articles which deserve to find a place among a collection of political essays.

Newspapers are now as common in the British dominions abroad as in England; and in British India six gazettes are published in the Bengali language. In Van-Diemens Land no fewer than six papers are published at Hobart's Town, namely: the 'Hobart Town Gazette,' the 'Hobart Town Advertiser,' the 'Tasmanian and Austral-Asian Review,' 'Colonial Times,' and 'Bent's News and Tasmanian Threepenny Register;' and two at Launceston, the 'Cornwall Chronicle' and the 'Launceton Advertiser.' In New Zealand there are five newspapers, published at Sydney. At Perth in Western Australia there is a weekly paper. The 'South Australian Gazette' is published at Adelaide; the first number was printed in England, and carried out, with printing materials, to Australia. It has been followed in Sydney, and in the several of the other colonies. A newspaper has commenced this year (1839) at Port Lincoln.

Two newspapers have also been commenced within the present year at Melbourne, in the newly-explored territory of Australia Felix. The first New Zealand Colony, which was founded in November, 1839, the 'Tasmanian and Austral-Asian Review,' a weekly newspaper, which the first number was printed in England.

In Germany newspapers originated in the 'Relations,' as they were termed, which sprang up at Augsburg and Vienna in 1524, at Braunschweig in 1526, at Diisseldorf in 1549, and at Nurnberg in 1571, and which appeared in the form of letters printed, but without date, place, or number. The first German newspaper in number sheets was printed in 1612. Of the Italian journals, the 'Gazzetta di Milano,' 'Gazzetta di Venezia,' are of extremely old standing. The 'Gazzetta di Sicilia' are daily; the 'Diario di Roma,' 'Gazzetta di Firenze,' 'Giornale di COMMERCIO di LIVORNO,' 'Gazzetta di Bologna,' 'Gazzetta Piemontese,' 'Gazzetta di Genova,' 'Voce della Chiesa a Cremona,' 'Osservatore Romano,' 'Osservatore Veneziano,' and some others, appear two or three times a week, and a much greater number weekly.

The whole number of journals in Italy, including all periodicals, political, literary, and scientific, exceeds two hundred. Madrid has its 'Gazeta,' and Lisbon has also a weekly paper for the publication of official documents and communications. In Belgium and Holland there are, in French and Dutch respectively, a considerable number of daily and weekly papers. In 1630 Switzerland had twenty-four weekly papers, and five others which appeared once a fortnight: the number is since increased. Most of them are written in German. Some are in French, one or two in Italian, and one in the Romansch or Grisons language. The first Russian paper was published in 1725. There are also daily and periodicals published in the Russian empire was seventy-three; but the only important political journals are the 'Gazette de St. Petersburg' and the 'Journal de St. Petersbourg,' in both of which appear much material devoted to political discussion. Denmark has about eighty journals, of which twenty-three are devoted to politics and twenty-five to the sciences. The Greeks have several newspapers in their own language. A journal is published at Corfu, one at Athens, and another at Smyrna. The 'Moniteur Ottoman' is published at Constantinople, in French, under the sanction of the sultan, and the viceroy of Egypt has his official paper printed in the same language, at Boulaik near Cairo.

In the United States the increase of newspapers has been more rapid than in England. In the year 1804, the first Anglo-American newspaper, called the 'Philadelpia News Letter,' was published at Boston. In 1719 the first newspaper was published in Pennsylvania; and in 1733 the first newspapers were published in New York and Rhode Island. Now there is hardly a petty town in any of the twenty-six states without its newspaper, and the largest cities, such as New York, several are published daily. In Pennsylvania a considerable number of newspapers are printed in the German language and distributed among the numerous German settlers in that state. One German newspaper in Boston is also printed in the German language. In Louisiana, some papers are printed both in French and English.

The largest collection of newspapers in England is in the British Museum. This collection was commenced by a considerable number being sent there, at a time when the Museum was established, with the library of Sir Hans Sloane. Another collection, of itself valued at 1000l., was purchased in 1813 with the library of the late Dr. Charles Burney. At the end of two years from the time of publication the commissioners of stamps now transfer to the British Museum, for public use, copies of all the stamped newspapers, both of town and country.


NEWTON, ISAAC, was born 25th December, 1642, old style, at Woolsthorpe, a hamlet in the parish of Colsterworth and county of Lincoln, eight miles south of Grantham. His father, Isaac Newton, married the daughter of James Ayscough of Market Overton in Rutlandshire, and the subject of this article was their only child. The mother was left a widow during her pregnancy, and appears to have given premature birth. The child, which was named William, was born 25th December, 1642. Mrs. Newton, who was left with the care of the family, by Newton himself, in the year 1705, it appears that he was descended from a family of that name, which was resident at Westby in Lincolnshire until about the year 1325 ("Biog. Brit."); when it became possessed of the manor of Newton, and the adjacent parishes. Mr. Newton did not come from a wealthy family. The mother, by whom he was sent to two day-schools at Skillington and Stoke, until he attained the age of twelve years, when he was admitted into the free grammar-school of Grantham. While here he evinced considerable aptitude for mechanical contrivances, and among other things he constructed a windmill and water-clock, but in the prosecution of his regular scholastic studies he for some time took little interest, and accordingly stood very low in the school. At length however the boy who was above him, having one day given him a severe kick upon the shoulders, in revenge whereof he suffered the great pain, Isaac laboured incessantly till he got above him in the school, and from that time he continued to rise until he was the head boy. (Brewer's Life.) The decease of Mrs. Newton's second husband, in 1660, brought the Lette to the manor of Woolsthorpe, and in that year Isaac was taken from school to assist in the management of the farm. Accordingly on market-days he was sent to Grantham, accompanied by an aged domestic, either to dispose of farm produce, to purchase such articles as were needed by the family. But on these occasions it more frequently happened that Isaac stopped by the way-side, watching the motions of a water-wheel or some other piece of machinery, or if he reached the town of Grantham it was only to resort to the apothecary's (since in which he had resided while he attended the grammar-school, and where a few old books afforded him ample entertainment until his trusty companion summoned him to return home. These and other instances having shown the inutility of thwarting his studious disposition he was shortly after sent back to Grantham school.
long he remained at school this second time does not appear, but when he had attained his seventeenth year it was determined to send him to Trinity College, Cambridge, at the recommendation of his uncle, the Rev. W. Ayscough, who had been himself educated there. His matriculation took place 5th June, 1660, the year in which Dr. Barrow was appointed to the Greek professorship.

It is a matter of regret that no definite information exists as to the order in which Newton pursued his mathematical studies before entering the university. But gives an unauthenticated although very probable anecdote to the effect that Wallis was young, and that one of his books found him beneath a hedge, wholly absorbed in the solution of a mathematical problem; but we find no mention of any mathematical work which had occupied his attention, with the exception of the "Elements" of Euclid. It asserted that a glance at the fundamental propositions was immediately followed by a knowledge of the numerous consequences which may thence be deduced. But the name of Newton is not enhanced by stating as true what is in the highest degree improbable. It is certain that he had read the "Elements," though not perhaps with that attention which he afterwards acknowledged their importance deserved. As to his knowledge of natural philosophy, his water-clock, windmill, and sundials may be considered as early acquaintances with the principles of mechanics and with the doctrine of the sphere, for it is difficult to suppose that a mind such as his, so ardent in the pursuit of truth, could have contented itself with following a few rules of authority without understanding the reasons upon which they are based. Reaction must be not too deliberate, we have only to look to the nature of his discoveries during the first six years of his residence at Cambridge, that is, before the composition of his twenty-five fellows, to be convinced that he must either have pushed his studies to a very vast extent before entering the university, or that his subsequent progress was perfectly unparalleled; for in this period of six years he invented his Binomial Theorem, established the fundamental laws of his dynamical and gravitational science, and stated the law of the force in virtue of which the planets gravitate towards the sun, although, in consequence of the erroneous measurement of the earth then in use, it was not till afterwards that he was able to show that the same law holds with respect to the moon, and that the force manifested at the earth's surface in the fall of a pebble is identical, as to its nature, with that which pervades the whole planetary system.

Descartes had already laid open a vast field of research by his successful application of algebra to geometry, and in his writings, both mathematical and speculative, were then much read at Cambridge. After the perusal of Sanderson's "Logic" and the "Optics" of Kepler, the attention of Newton was directed to the "Geometria" of Descartes, a work which, doubtless, first introduced him to those subsequent pursuits, by furnishing him with general methods of direct investigation, such as, till the time of Descartes, were totally unknown. Upon the whole however he was much less indebted to the analytical writings of Descartes than he was to those of his countryman, Wallis. He seldom read without making comments upon the text or marginal notes of such parts as appeared to him susceptible of extension or improvement. In this way he completed the perusal of Descartes' "Geometria," by which he was enabled to understand the "Arithmetica Infinitorum" of Wallis. In this work the author had suggested a method of obtaining the quadrature of the circle, the practicability of which depended upon an interpolation. Newton set about effecting this, notwithstanding the efforts of the Greek professor Wallis, that he believed it to be impracticable. The attempt however proved not merely successful, but in the course of his inquiry he was led (1663-4) to a discovery of greater moment, the binomial theorem, of which he wrote under the title "Geometria," which, if he had hitherto baffled the attempts of mathematicians, or of which solutions had been obtained only under particular circumstances, whereby the real difficulty had been rather evaded than overcome. The almost indefinitive application which he continued to make of this method, computing even the numerical values of the formula to which his investigations gave rise, as if he regarded the operation rather as a source of amusement than of labour, may possibly have been suggested by the view, as novel as it was important, which he took of the mode whereby magnitudes of every kind may be induced to be generated, and in the notion he early entertained of the possibility of deducing the definite value of a variable magnitude from the velocity of its increase or diminution.

The differential calculus to which this opinion gave rise was invented by Newton in or before the year 1665. Its history is given in the article Fluxions. The following year he composed his "Analysis per Equations Numerorum Terminorum Infinitarum," a tract which afterwards caused much confusion, as it contained the method of fluxions. But the following year, Barrow, with Newton's permission, transmitted the MS. to Mr. Collins, at the same time acquainting him that it was the production of a young friend of his who possessed a fine genius for such inquiries. Collins took a copy, and sent it to the late Dr. Halley. The copy was afterwards found among Collins's papers, and attested the year in which the original treatise had been composed. It was first formally published in 1712, but long previous to that its contents must have been pretty well known in certain circles. It was one of the principal mathematicians of the day, both in England and upon the Continent.

Newton was admitted sub-radar in 1661, became scholar in 1662, B.A. in 1664, and M.A. in 1667. For the latter year he was a candidate with Mr. Robert Uvedale for the law-fellowship of Trinity College; when Barrow, having found the candidates on an equality as regards attainments, conferred the appointment on Uvedale, he being the eldest. In 1667 he became junior fellow, took the degree of B.A., and became senior fellow in 1668. He succeeded Dr. Barrow as Lucaaian professor of mathematics in 1669.

The raging of the plague, in 1665-6, induced Newton to quit Cambridge and retire to Woolsthorpe. Here it was that he began to reflect more particularly upon the nature of the force by which bodies at the earth's surface are drawn towards its centre, and to conjecture that the same force might possibly extend to the moon, and there be of sufficient intensity to cause the moon to be retained in its orbit about the earth. To compare this hypothesis with observation, it was necessary to determine the law according to which the intensity of such a force would vary with the distance from the earth's centre; for although no sensible variation can be detected within the narrow limits of direct observation, namely, the summit of the highest mountains or the bottom of the deepest mines, it was reasonable to presume that some variation would be discovered, and thereby retain it in its orbit about the earth. To a mind so habituated to generalise, it was a natural extension of his hypothesis to suppose that the same kind of force which binds the planets to the sun and the moon and thereby retains them in their orbits about the sun. Now the assumption of an attractive force emanating from the sun was at this time far from being a novelty, and it had even been asserted by Boulliau that the sun's light was such a force, and its intensity would vary inversely as the square of the distance from the attracting body; but neither Boulliau nor those who entertained similar opinions had given any proof, either empirically or otherwise, of what they had asserted; and certain of them did not even attempt to establish that the forces which retain the planets in their orbs were identical, as to their nature, with that which draws a stone, when let fall, to the surface of the earth. Newton showed that the law of the inverse square of the distance is...
NEW

that which really exists in nature; and further, that this law was a necessary consequence of the analogy already discovered by Kepler between the periods of those six planets, and the diameters of the planets. The following will convey a notion of the line of reasoning by which Newton arrived at this result.

The intensity of the force, whatever may be its nature, which counters the centrifugal force of a planet, is proportional to the square of the distance of that planet from the sun; so that if the time be small, the force will be proportional to the square of the arc divided by the planet's mean distance, or to the square of the linear velocity by the distance. If therefore for the velocity we substitute the ratio of the mean distance to the distance of the planet from the sun, and this magnitude by which the latter is divided, we shall find that the force varies as the distance by the square of the periodic time, that is, by Kepler's law, as the distance by the cube of the distance, that is, inversely as the square of the distance. Having thus established the law whereby the planets gather towards the sun, he proceeded to examine whether the same law regulated the gravitation of the moon towards the earth.

At this point it is that Newton's reasoning first rests upon conjecture, namely, that the force manifested at the earth's surface in the form of a tide, is proportional with that which is constantly deflecting the moon towards the centre of the earth, and that the law of its variation was the same as that which he had determined for the planets. If such were the case, the distance farthest removed from the moon, in one second of time, to bear the same ratio to the distance fallen through by a body at the surface of the earth in one second, which the square of the earth's radius bears to the square of the moon's mean distance. The length of the earth's radius, which, even if the physical calculations had been incorrect, the conjecture, was at that time very imperfectly known (a degree of latitude being estimated at only 60 miles instead of 59½ miles, its more correct length); the consequence of which, was, that the result of his calculation indicated a force at the distance of the earth from the moon proportional to the inverse square of the distance, a result, and one moreover, that he obtained from direct observation. This difference, which many would have considered sufficiently small to establish the correctness of the hypothesis, was regarded by Newton rather as a direct refutation of its truth.

He then proceeded to refute the conjecture and to demonstrate, as he supposed, that the distance of the moon from the earth was not the same as that of the earth from the sun, but in the course of the work, observing that he had formerly anticipated was about to be realised, his ardour is said to have brought a state of excitement and nervous irritability which precluded his further progress, so that the completion of the calculation was confided to a friend. The following year he transmitted to London a few propositions on the motion of bodies acted on by centripetal forces, which were shortly after communicated to the Royal Society, and constitute the opening propositions of his 'Philosophiae Naturalis Principia Mathematica.' They were presented to the Royal Society by Dr. Vincent in 1686. Its personal gave rise to many remarks from Dr. Hooke respecting the work, so that he was convinced of the correctness of the distance of the second law of motion, which Kepler, to which he laid claim. Hooke's pretensions upon this head were never made out; and from the known mediocrity of his mathematical attainments, as well as his general disposition to debunk from every new device of himself, if they are looked upon as very doubtful. Newton however appearing apparently to his remarks with more warmth than discretion, he (Newton) afterwards expressed a willingness to compromise the dispute by the insertion of a scholium (ib. i. prop. iv.), restating the law of gravitation independently to Sir Christopher Wren, Hooke, and Halley. The printing of the 'Principia' was superintended by Dr. Halley, and the expense defrayed by the Royal Society.

It appeared in 1687, London, 4to. For an account of this memorable work, the reader is referred to PRINCIPIA.

The theory of universal gravitation advanced by Newton, which in each particular instance is supposed to act at all distances in the direct proportion of its mass, and inversely as the square of the distance, is, from its nature, insusceptible of direct demonstration, and could only be established by showing that in the phenomena of nature we in no instance opposed to such a law of action, and that the phenomena themselves are in full accordance with the explanation of those phenomena. Newton did much towards this; but the completion of the proof required the labours of many succeeding mathematicians and astronomers to bring it to a conclusion.

The opposition to the theory made by Leibnitz, the exces- sive and unphilosophical principles which he endeavoured to substitute in its stead, and the meanness with which he sought to injure the reputation of Newton by designating the theory subservient of true religion, are equally prejudicial to his scientific and moral fame. The long interval that elapsed before the writings of Newton began to be generally understood and his doctrines appreciated, is attributable exclusively, as regards England, to their inherent abstruse- ness.

On the Continent they had further to contend with established prejudices in favour of the doctrines of Descartes.

The latter half of the seventeenth century is not less remarkable for its optical discoveries than for the zeal with which they were generally with their consequences.

The first of the small, rather trifling, and of the angles of incidence and refraction, which furnishes an easy explanation of all the circumstances attending the simple refraction of homogeneous light, had been discovered, and the discovery attributed without a doubt to the learned and curious naturalist, Huyghens, who, though he acknowledged the mutual gravitation of the masses of matter, refused his assent to the assumed attraction between their ultimate particles.

If we turn to the work made by Leibnitz, the exces- sive and unphilosophical principles which he endeavoured to substitute in its stead, and the meanness with which he sought to injure the reputation of Newton by designating the theory subservient of true religion, are equally prejudicial to his scientific and moral fame. The long interval that elapsed before the writings of Newton began to be generally understood and his doctrines appreciated, is attributable exclusively, as regards England, to their inherent abstruse- ness.

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The first of the small, rather trifling, and
the screen, so that the deviation from the direction of the primitive ray was different in all, being greatest in the violet and least in the red. He therefore came to the important conclusion 'that light was not homogeneous, but composed of rays, some of which were more refrangible than others.' This discovery that light consisted of rays was subsequently the publication of Wallis’s optical lectures, which appeared in 1669, for otherwise it is improbable that Newton, to whom the renewal of the MS. was confided, and who receives the author's acknowledgements for having 'corrected several mistakes which were conveyed to him,' would have permitted his friend to provoke contemplate views so erroneous.

In the above year however Newton began to deliver a course of lectures on optics at Cambridge, and the composition of the Opticks appeared the following year. He therein composed his system of optics, wherein the fundamental properties of light were for the first time unveiled and established, and classed according to pure experience alone. The earliest intimation of his hypotheses a method of procedure which was then as surprising and as little heard of as the properties themselves:... both the physical and natural sciences were at this time so mixed up with mere opinions, that few persons were capable of distinguishing. His theories, however, were as yet a presumption between a physical hypothesis and a law of nature rigorously demonstrated.

Although Newton had been thus successful in his optical inquiries, and had thus established the principal source of illusions in reflecting telescopes, he only did not see how this indistinguishability might be removed, but even designated all attempts as 'desperate' (Optics, lib. i., prop. 7); and the long interval which elapsed before the discovery of the refractive telescope may be attributed to the unraised reliance which in this instance was placed in his decision. He regarded as a self-evident truth, which it therefore needed nothing nor observation to confirm, that the spectra formed by different refracting media were always of equal length whenever the refraction of the ray was the same; in other words, that the dispersive powers of different media were the same where their indices of refraction corresponding to the mean ray were equal; and although the fact was controverted by some of the most respectable continental philosophers who did not accept his doctrines, the circumstance appears to have neither shaken his belief, nor to have suggested the propriety of convincing his opponents by an appeal to experiment. An attempt was made by Huyghens to determine the index of the colour of the spectrum and the divisions of the harmonic chord, led him to suppose that the refractive indices of any medium corresponding to the different coloured rays might be deduced from a knowledge of the index of refraction corresponding to the mean. If was, however, characterised by the water 'a little sugar of lead' (Brewster), his object being merely to increase the refractive power of the water; but he thereby unknowingly also increased its dispersive power, and probably increased visibility equal to that of the glass prism previously employed. By these mistakes he was induced to forego all attempts to perfect the refracting telescope, and directed his attention to the construction of reflecting telescopes on the principles pointed out by James Gregory's Optick, prof. 36. 1666.

In 1668-9 he had succeeded; and in 1671 he executed a second telescope 'with his own hands,' which is still carefully preserved in the library of the Royal Society. For the description of Newton relative to the colours of thin transparent substances the reader may refer to TOUR PLATES. It was in order to explain the phenomena exhibited by such substances, and the partial reflection and transmission of light incident upon diaphanous surfaces, that Newton devised the process of 'deterioration and transmutation.'

Speaking of Newton's theory of colour, Sir John Herschel remarks, 'It is a theory of extraordinary boldness and subtility, in which great difficulties are evaded by elegant refinements, and the appeal to our ignorance on some points is so dexterously backed by the weight of our knowledge on others, as to silence if not refute objections which at first sight appear conclusive against it. (Encyc.

In 1672 Newton was elected member of the Royal Society. In 1675 he received a dispensation from Charles II. to continue in his fellowship without taking orders. About the year 1667 he was appointed one of the examiners of the privileges of Cambridge against the attacks of James II. In 1668 he took his seat in parliament as one of the representatives of the university, and was resident in London until the dissolution of parliament, which took place the following year. In 1677 he drew a diagram in the house. On no occasion does he appear to have taken any conspicuous part in the debates of the house. Prior to the year 1695, when he was appointed warden of the mint, with a salary of 500l. to 600l. per annum, his pecuniary circumstances are said to have been rather straightened, and whatever may have been his own expectations, his friends seem to have reckoned upon some token of liberality from Charles II. and his successor. The profligate reign of the former, and the opposition which Newton had shown to the views of James, sufficiently account for their expectations having been disappointed. His sole income is stated to have been derived from his Lessian professorship, and from the produce of the manor of Woolsthorpes, the amount of which, though ascribed to his inactivity, may probably be accounted for by the natural generosity of his disposition and the frequent occasions which he probably had of relieving the necessities of his poorer relations. His fellowship however must have had a considerable share in securing him a certain amount of his fortune, and it is said, that in 1693 he sold his manor of Woolsthorpe for 32,000/. About the year 1676, Leibnitz having heard of many new results obtained by Newton by means of an infinite series (the Binomial Theorem), he expressed to Oedenburg his wish to be acquainted with it. This led to a correspondence between Newton and Leibnitz, wherein the former also communicated many beautiful theorems on the quadrature, rectification, &c. of curves, to which he had been led by the investigation of the calculus of fluxions, but at the same time withheld all information concerning the principles of that method except in the form of anagrams, which were very unlikely to be deciphered. The letters of Leibnitz in reply showed that he was already in possession of a great number of facts, and equally curious in its applicability. An account of the dispute which afterwards arose between the English and foreign mathematicians, relative to the claims of Leibnitz as an independent inventor of the calculus, and the part which Newton himself took in the controversy, may be found in those of Fluxions (vol. x., pp. 331-2), and in COMMERC suddenly.

The five years preceding Newton's appointment to the wardenship of the mint were spent in the preparation of the Principia. During parts of the years 1692 and 1693 he suffered an intermittent temporary mental aberration, although it was between December, 1692, and February, 1693, that he wrote his four celebrated letters on the existence of the Deity, at the express request of Dr. Bentley.

Mr. Van Swinden, while examining the MSS. and autograph letters of Huyghens, met with a small journal in the hand-writing of the latter. It is deposited in the library of Leyden, and contains the following note, communicated by Mr. Van Swinden to M. de Puy, and communicated by the latter in the "Biographie Universelle." * 99 May, 1694. Mr. Collin, a Scotchman, informs me that the illustrious geometer Isaac Newton has insane for the last eighteen months from a peculiar state of the mind. If true, or from the destruction of his chemical, together with many important MSS., by fire, Mr.
Cain adds, that when he came to the archbishop of Cambridge, his conversation indicating an alienation of mind, he was immediately taken care of by his friends, confined to his room, and remedies applied, by means of which he has now so far recovered as to again be able to comprehend the Principia. Hayghens, having mentioned this circumstance to Leibnitz last December, replied, dated 23d December 1694, expresses his gladness at receiving the account of Newton's convalescence at the same time that he received that of his illness, and adds, "It is to men like you and him, Sir, that a long view David Brewster has been at considerable pains to determine how far the formula of lunar theory is consistent with fact, and has succeeded in bringing to light many interesting documents which bear immediately upon this and other points. Among these is a manuscript in the possession of Sir Robert Pepys, Esq., professor of political economy at Cambridge. It commences in the year 1665, and under 3rd February, 1678, Pepys wrote: 'I have only the pleasure of the destruction of Newton's MSS, on the theory of colours, established upon thousands of experiments which he had been twenty years of making, and which had cost him many hundred pounds, and he goes on to say that it was in the course of this experiment that he entered the chapel, adding that 'when Newton had come back and saw what had been done, every one thought that he would have run mad; he was so troubled thereat, that he was not himself for a month after.' Another version of the story is, that Newton thought Pepys had intruded an optical experiment and had lighted taper upon his papers, and upon his return, finding the extent of his loss, he exclaimed, 'Oh, Diamond, Diamond, little do you know the mischief you have done me!' The above extract from the diary of Mr. Pepys, while it in some places mentions Pepys, seems to be founded in the possession of Lord Braybrooke. Among these is the following from Newton to Pepys, excusing himself from fulfilling a promise he had made to see the latter when next in London. Pepys entertained the very highest esteem of Newton, and had been very much for his time and longevity. "'September 13, 1693. Sir, - Some time after Mr. Millington had delivered your message, he pressed me to see you the next time I went to London. I was averse; but upon your pressing me upon it, I did so. I told him that I did it only because I was extremely troubled with the embroilment I am in, and have neither ate nor slept well this twelvemonth, nor have my former consistency of mind. I never designed to get anything by your interest, nor by King James's favour, but am now reduced by a just withdraw from your acquisitive knavery and see neither you nor the rest of my friends any more, if I may but leave them quietly, &c. - Isaac Newton.'

The wording of this letter excited in Mr. Pepys the suspicion that Newton was suffering from 'discomposure of head' and wrote to Millington that he had written to Mr. Pepys a very odd letter, at which he was much concerned; asked that it was a distemper that much seized his mind, whether he had consulted a physician, and had not slain your pardon, he being very much ashamed he should be so rude to a person for whom he hath so great an honour. He is now very well, and though he fear is under some degree of melancholy, yet I think there is no reason to suspect it has any rational foundation, and I hope you will not pourer out. While labouring under the same melancholy and nervous affection, he had characterised the writings of Locke as immoral, and designated their author a Hobbist. In a letter to Locken, dated 'At the Bult in Shoreacit, September 14, 1693,' he says: 'Being of opinion that you can embroil me with women, I was so much affected by it, that when one told me you were sickly and would not live, I answered, 'were better if you were dead.' He then asks for forgiveness for this uncharitableness, and for the ill opinion he had entertained of his writings, and concludes, 'I beg your pardon also for saying or thinking that there was the sign to sell me an office, and am your most humble and unfortunate servant, Is. Newton.' In 1694 he appears to have recovered his former tranquillity and strength of mind; for in that year we find him actively occupied in the revision of his lunar theory by the observations of Flamsteed, with whom he had hitherto been on the most intimate terms. The quarrel which subsequently took place between Newton and the astronomer royal is noticed under Flamsteed.

In 1699 Newton was elected president of the Royal Academy of Sciences at Paris; in 1703 he was elected president of the Royal Society, to which office he was annually re-elected till his death; and in 1705 he was knighted by the late monarch. In 1722 he became subject to a disorder of the bladder, accompanied with cough and gout. He presided for the last time at the Royal Society on the 28th of February, 1727, and died at Kensington on the 20th of March following, in the eighty-fifth year of his age. His body was interred in 1736 by Sir Tern, in the Abbey, the funeral being attended by several of the nobility and the principal members of the Society. In 1731 a magnificent monument, designed by Kent and sculptured by Rysbrack, was erected in the abbey at the expense of his relatives. It is situated close to the altar, and bears an inscription ending with 'Sine gratulatur, mortales tale tan tumque existatissimi humani generis decus.' It is not true that the binominal theorem is also engraven upon it, though it is so stated under 'Binomial Theorem.' on the authority of a mistaken writer. The monument was repaired in 1776 by Sir Peter Lely, who had been the Tower, bearing on one side the head of Newton, with the motto 'Felix cognoscere causas,' and on the reverse a personification of the mathematical sciences. In 1753 a full-length statue, by Roubillac, was erected in Trinity College chapel, bearing his bust sculptured by Turner, from Lucerius, 'Qui genus humanum ingenio superavit.' There is also a bust of Newton in Trinity College library, by the same sculptor. Besides these memorials of Newton we have several portraits of him by Vanderbank, Rите, Sir Godfrey Kneller, and Sir Peter Lely. The last one is the earliest which Newton was a B.A.

The manor-house of Woolsthorpe, recently visited by the present occupant, is a returned to the present occupant into a lusterous chamber. The two diastole engraved upon the southern wall are still very distinct, but the styles of both are wanting. The larger dial is about a foot in diameter. The celebrated apple tree, the fall of one of the apples of which is said by Pemberton to have turned the thoughts of Newton to the subject of gravitation, was thrown down by the wind about five years since. A drawing has been preserved of its in its prostrate position, and another tree grafted on its stock. In his person Newton was short, but well set, and inclining to corpulence. His hair was abundant, and white as silver, without baldness. His eye was bright and penetrating till within the last twenty years of his life; but his countenance, though thoughtful, seldom excited much emotion in those who saw him. He was uncouth; the first version there appears to have been little either very remarkable or agreeable; but we have the testimony of Dr. Pemberton that 'neither his ago nor his universal reputation had rendered him stiff in opinion, or in any degree sparing of speech, for he had always looked upon it to be the effect of patient and continual thought rather than to any peculiar genius with which nature had endowed him, he looked upon himself and his labours in a very different light from that in which both he and they were regarded by mankind.' 'I know not,' he remarked, a short time before his death, 'what I may appear to the world; but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst

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And an able review of this work, by Mr. Deane, appended to Bioc's Life of Newton in the 'Biographic Universelle,' tome xxii, pp. 180-6. (Horsley, tome v.)

8. 'Table of Assays,' printed in Dr. Arbuthnot's 'Tables.'

9. 'Optical Lectures,' 1726, Lond., 8vo., comprising those contained in the second set published in Latin, 1729, Lond., 4to. (Horsley, tome iii.)

10. 'Observations on the Prophecies of Daniel and the Apocalypse of St. John,' 1733, Lond., 4to. (Horsley, tome v.)

11. 'A method of Fluxions and Analysis by Infinite Series,' translated into English from the original Latin by John Colson, to which is added a Commentary by the translator, 1736, Lond., 4to.

12. 'An Historical Account of two notable Correctors of Scripture,' written prior to 1691, but first published in 1726, Lond., 4to. (Horsley, tome vi.)

Newton contributed some papers to an edition of Varenus's 'Geography,' printed at Cambridge in 1767, 8vo.

The papers communicated by Newton to the Royal Society are comprised in The 'Transactions.' The principal works of Newton were collected and published by Dr. Horsley, under the title of 'Newtoni Opera extant omnia,' 1779-85, Lond., 5 vols. 4to. In the following list, where a work had been reprinted in Horsley's edition, only the first edition is mentioned, with few exceptions, first printed in Horsley's edition:—

Tome i. 'Descriptio quaedam ex Epistolis Newtoni ad Series Fluxionumque pertinentiam,' 'Artis Analyticam Supplementum' (published in the Geometrica analysis, Tome iii. 'Theorae Lumen.' Tome iv. 'Letters onious Superintendents of Education, and Philosophy, published from the Originals in the Archives of the Royal Society,' 'Letter to Mr. Boyle on the Cause of Gravitation,' 'Tabulae duorum Colorum alter alterius constructa, &c.' (published by the Royal Society in 1715, 4to.)

These works, of which some, like 'The Chronology' and 'An Abstract of the Chronological Observations,' were in 12 half-sheets folio, at the same time they were so many of these theological subjects were mere copies over and over again, with very slight variations. Of these MSS., the only ones which Dr. Pellet had printed were 'The Chronology' and 'An Abstract of the Chronological Observations,' in the latter in half-sheets folio. At the same time he recommended for further consideration those entitled 'De Mosa Corporum;' 'Paradoxical Questions concerning Atlantisis;' 'History of the Prophecies;' and a bundle of loose mathematical papers. A catalogue of these MSS. was appended to a bond given by Mr. Conduit to the administrators of Newton, wherein he bids himself to account for all profit he may make by their publication. A list of some of the theological subjects is at present, we believe, in the possession of the family of the earl of Portmahon. In addition may be mentioned the valuable and lutherland unpublished collection of letters between Newton and Cotes, relative to the publication of the 'Principia,' preserved in the library of Trinity College, Cambridge, the Correspondence of Newton with Mr. Pepys and Mr. Milton, in the possession of Lord Braybrooke; and other MSS. in the Bodleian library, Oxford.

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Horsley, English, At and NEW prefixed Prncipia, the Pnncipta, 728, editions discreditable. But popular curves ten this his the...
Lees, by Birch, Land. 1743, fol. tome i. p. 147. The reader may further consult Montucla, Hist des Mathem., tomes ii., iii., iv.; Pemberton’s Account of Newton’s Philosophy; Maclaurin’s Account of Newton’s Discoveries; Priestley’s History of Optics; Laplace, Exposition du Systéme du Monde; v. Lord King’s Life and Correspondence of Locke; Life of Newton, in the Library of Useful Knowledge, &c.)

NEWTON’S PRINCIPIA. [PRINCIPAL.

NEWTON, THOMAS, born 1704, died 1782, having been for the last four years of his bishopric of Bristol and for the last fourteen dean of St. Paul’s, a prelate of not very remarkable powers, natural or acquired, but a man without reproach, acceptable in the society of the great, and possessing of a certain amount of general and professional knowledge.

He is chiefly known by two works: an edition of the ‘Paradise Lost,’ with notes, first published in 1749, and his ‘Dissertation on the Prophecies,’ of which the first volume alone is tolerably well copy’d and left a few lines on the Tyroonnel family, and in 1744 presented by Pulteney earl of Bath, who was his great friend and patron, to the living of St. Mary-le-Bow. He next became lecturer at St. George’s, Hanover Square, prebendary of Westminster, dean of St. Paul’s, and archbishop of Bristol, and finally dean of St. Paul’s.

NEWTON STEWART, a town in the parish of Ardstaw, barony of Strabane, county of Tyrone, and province of Ulster, situated on the left bank of the River, or Moubrach, 3 miles (English) north by west from Omagh, and 116 miles (English) north west by north from Dublin (direct distances). It derives its name from Sir William Stewart, to whom the adjacent lands were granted by Charles I. Being surrounded by a high mountainous country, it was only the pass of the mountainous district, it was formerly regarded as a place of some importance. In 1669 it was burnt by order of James II., and remained a mere heap of ruins till 1727, when it was restored by the Stewart family. The houses at present form a high table-land, and were erected the same year, at the expense of Dr. Hall, the then vicar of Ardstaw, and subsequently bishop of Dromore. Young, in 1750, described this place as ‘a row of neat stone and slate cabins.’ It now consists of three streets, which are tolerably well built, and contains one or two inns. Its population, in 1831, was 1737, that of the entire parish of Ardstaw being 18,617. Many of the inhabitants are employed in the neighbouring quarries. The market is Monday. The fairs are held on the last Monday in every month.

(Young’s Tour in Ireland, Lond, 1780, 4to.; Population Returns.)

NEWTON. [MONTGOMERYSHIRE.]

NEWTON, a town, in the parish of Wem under the immediate.

NIAGARA RIVER AND FALLS. The Niagara river unite lake Erie with lake Ontario, which is 334 feet lower than lake Erie. The river descends through this difference in level in the space of about 33 miles. Near the point where the river turns a high table-land, 500 feet above lake Ontario. The river is one mile wide. Little lower down, at Sandy Island, both arms re unite, and at this place the river is about two miles wide. A little lower down, at the mouth of the Welland or Chippawa river, it suddenly contracts to less than a mile, and its current rapidly increases from three to seven or eight miles an hour. The course of the river in this part is nearly due west, and its banks begin to rise first to ten or twelve feet, and soon to twenty, thirty, and fifty feet above the surface of the water. This rising of the banks is not the effect of a rise in the surrounding country, which in fact preserves its level in a continuous plain, but it is owing to the bed of the river descending on an inclined plane. The waters are borne down with great force against the Canadian side, and driven back by the high rocky banks, for at this point the river suddenly turns to a course which is east of north, and immediately after falls three hundred feet, which it descends over a perpendicular height of 160 feet into a terrific gulf. Goat Island divides the cataract. This island is about 230 yards wide. The cataract between it and the American side is 500 yards wide, and 162 feet high; but between the island and the Canadian side, it is 790 feet wide and 150 feet high. Both falls unifo before they are lost in the gulf below. The American cataract descends nearly in a perpendicular line, and is divided into two cataracts by a small rock. The fall between this rock and Goat Island is only ten yards wide, and is called the cataract of Montmorenci.

The Canadian cataract rolls over a precipice projecting about fifty feet beyond its base, and the falling water forms a curve, between which and the rock itself persons may safely pass on a rope passing over a pulley immediately over the awful abyss. Below the Falls the river flows with considerable rapidity between banks from 200 to 300 feet high. These banks are perpendicular for about half their descent, but towards the base they form a slope immediately adjacent to the river. Four miles below the Falls, in a semicircular basin, there is a terrific whirlpool formed by the water, which descends into the vortex with furious impetuosity, and rushes out between the perpendicular walls of the escarpment. Not far from this place the river passes the low ridge called Queenston Heights, and enters the level country which surrounds lake Ontario.

This enormous volume of water is thrown over a mass of limestone rock, which, by the force of the water, has been worn down to a level surface. Below the limestone there is a thicker mass of soft shale, which crumbles away rapidly; so that the limestone above overhangs it forty feet or more, and fragments of the superior rock fall down from time to time. Thus the cataracts are slowly changing the outline of the cliffs. The deep channel in which the river flows below the Falls seems to owe its origin to the same cause that is now in operation; and it is not improbable that the Falls were once at Queenston, which is now seven miles below the cataract. The Niagara river drains from Queenston to lake Erie.

The Niagara descends—

From lake Erie to the head of the Rapids above the Falls 15 feet

By the Rapids above the Falls 15 feet

By the Great Fall on the American side 163 feet

By the base of the Falls to Queenston 104 feet

From Queenston to lake Ontario 2 feet

334 feet

To obvi"
only white lead, or carbonates of lead (v. 74, &c.), and litharge, or protoxide of lead (v. 607, &c.).

To counterbalance in some degree Haller's unfavourable opinion of Nicander's extant works, it ought in justice to be stated that his knowledge of natural history appears to be at least equal to that of other writers of his own or even of a later age, while on the subject of poisons he has been considered a great authority: Galen several times quotes him, and other doctors, Aelian, and Johannes Attuarius have borrowed from him his remarks.

With respect to his merits as a poet, the most opposition opinions are to be found both in ancient and modern writers. In the Greek anthology Colophon is congratulated for having written in Theriaca (p. 270, ep. 567, ed. Brunnec.) Creono (De Orat., lib. i., cap. 16), alluding to his 'Gorgics' (a poem not now extant), praises the poetical manner in which he treats a subject of which he was entirely ignorant; while Plutarch (De Aud. Poetae, cap. 2) says that his poems are mere tricks, because it is put into metre, and will not allow it to be called a poem, because there is in it 'nothing of false or falsehood.' This very point Julius Caesar Scaliger thanks worthy of especial commendation, and says, 'Magna est ingenii, si potest, laus' (ed. com. v. lib. v. cap. 15.) He goes on to praise the accuracy of his expressions and versification, and declares that among all the Greek authors a more polished poet is hardly to be found than Nicander, on the other hand, in an essay 'Comment les Sciences in honorem Medecinae' of M. Roy, de. Berlin, (Ann. 1776, p. 423) mentions Nicander to show the antipathy that exists between the language of poetry and the subjects of which he treated. He calls him 'a poet who has not trodden the path of those who speak of veins, stones, and spiders, and considers his poems as fit only for the learned.

But probably his poetical genius has been a good deal cramped by the prosaic character of the subjects that he has chosen for his theme; and we may fairly say that his writings composed for the benefit of doctors were more expected from such unprofitable materials. As for his artistic language, probably every one who has ever read half a dozen lines of either his poems will agree with Bentley, who says that he studiously affected obsolète and antiquated words, and that he had an inordinate preference for words expected by such unpromising materials. As for his artistic language, probably every one who has ever read half a dozen lines of either his poems will agree with Bentley, who says that he studiously affected obsolète and antiquated words, and that he had an inordinate preference for words expected by such unpromising materials.

His 'Theriaca,' and the 'Alexipharmacia' were first published in Greek, with the Scholia to both poems, by the elder Aldus, Venet., 1449, fol. at the end of his edition of Dioscurides in 1550, and by Gellius. Aldus published the 'Alexipharmacia' in Greek and Latin, with the Scholia and copious notes, Halae, 1792, 4to. The 'Theriaca,' edited in the same manner, and containing also the margin readings of other poets, appeared in 1791, 4to. in Lipsia. 1816. The 'Theriaca' (the poem, Hill's translation) has been published in the Cambridge Museum Critic, with Bentley's emendations, 4to. 1817, p. 370, &c. There is extant a Greek paraphrase in prose of both poems (printed in Schneider's edition) by Eutychianus, deep as is the pathos, rich as is the poetic colouring, pathetic and graceful as is the language of both Nicander and his contemporaries.

NICANDER, KARL AUGUST, a recent Swedish poet of considerable celebrity, was born at Stenungs, on the 25th March, 1799, and educated at the university of Upsala, where he made his literary debut in 1820, first under the pseudonym 'Augsburg,' in the 'Kaledorn' (the Dunciad), and almost immediately afterwards by his 'Runesvärden, efter den förste riddare' ('The Runic Sword, or the First Knight'), a tragedy which manifested great power. His friend Baron von Hamilton, who was one of the most celebrated by this time (1819), had been taken by his friend Baron von Hamilton, who was entitled 'Runevotteren,' a series of sixteen legendary 'romans' among which which that which has for its subject Rv Vos is the most interesting. Another production of the same nature, a translation of the 12th canto of the celebrated story,—namely, his Enzo, an historical lyric in the "romans," appeared in a collection of poems by him in 1825-6; and in each of those years he obtained a prize one year for his poem on the 'Deutsche Nation,' another for the Swedish academy, the latter, and the prize for his poem on the 'Deutsche Nation,' another for the Swedish academy, the latter, and the prize for his poem on the 'Deutsche Nation," was treated with great beauty and energy by the Russian poet Batiushkov. Admirable and touching as are the stanzas of which the tragic tale of ' King Enzo' are poured forth,—deep as is the pathos, rich as is the poetic colouring, pathetic and graceful as is the language of both Nicander and his contemporaries, a favourite with the public. It was however translated into
German by Mohrnie (1839), and the collection in which it appeared is of particular interest as it forms a perfect but
sides, and in which he displayed a vigorous mind and
which, though it falls short of the antique, was based upon
passing rola. None of his biographers have been able to ascertain
the precise date either of his birth or death, but the former
must have been very near the commencement of the thir-
teenth century, as he was advanced in age, and became
quite decrepit in the year 1273, after which date no
certain mention of him can be traced. That he had attained
great skill in his profession in 1225 may be taken for
granted, but in that year he returned to Florence, the
latter to the city. (Recollections of the South, after a Tour through Denmark, Germany, Switzerland, and
its interest is, that it was used to establish with the
in its height and much feeling, if not always the most refined taste.
the city. This is a piece of singular beauty and pathos.
Nisander died February 7, 1839.

NICARAGUA. [CENTRAL AMERICA]

PISA, Tuscany, is a celebrated name in the history of art. He was among the very earliest re-
sculpture: he quitied the hard, dry, and mecha-
nical manner of his predecessors, and introduced a style
which, though it falls short of the antique, was based upon
similar principles, and in which he displayed a vigorous mind
and much feeling, if not always the most refined taste.
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It has been used by several native poets. The following is a specimen, describing a sanctuary raised on the ruins of the ancient town of Cemenelum:

Enfin, es ache lieu de servir un solitaire
Due moral aux présents habitants;
Donc es délivrer un saint empereur,
L'étant de la croix d'or d'être souverain.

The annual number of vessels entering the port of Nice is reckoned at about 2,000, being chiefly small craft, and mostly French or Italian. (Scrittori, Saggio Statisitico.)

The Riviera of Genoa. It is separated on the west from France by the river Arno, and by the north from the plains of Piedmont, by the Col de Tende, &c. feet above the sea, over which passes the carriage road from Nice to Turin. The river Roia, a rapid stream coming from the Col de Tende, crosses the eastern part of the county of Nice, near the borders of the French state, and its course appears like a section of a vast amphitheatre, the lower part of which consists of gentle hills and small valleys and plains, with a southern aspect. Being sheltered from the northern winds by the Alps, it enjoys a very genial climate, and is made productive by cultivation, especially of olives, figs, grapes, oranges, lemons, and other fruit. But the climate of Nice is not so mild in winter as that of Villafraanca, Mentone, San Remo, Nervi, and other favoured spots on the Riviera of Genoa; and the lemon-tree, which in these last-mentioned places is only occasionally seen in the open fields, is reared at Nice on espaliers against walls facing the south. (Fodor's, Voyage aux Alpes maritimes.)

The mountains, which are mostly barren and naked, occupy about two-thirds of the county; and the natural products of exportation are, oil, which is very fine, and in good years to the amount of 2,500,000 francs; silk, 160,000 francs; oranges and lemons, 75,000 francs; timber, 100,000 francs. Nice imports corn, wine, and cattle, manufactures of wine, and manufactures of silk. The population of the whole county is 140,000. The whole province is 'Porto franc,' that is to say, foreign goods are introduced without paying duty. (Bertolotti, Viaggio nella Liguria marittima, 1834.)

The principal towns are: Nice, 36,000 inhabitants; Villafraanca, with a good harbour and docks for the Sardinian navy, and a strong castle on the hill above, and 2,200 inhabitants; Sorriego, in a strong position, often mentioned in the last wars between the French and Sardinian troops. The Bay of Nice, on the coast of the same name, has 2,000 inhabitants.

The county of Nice, although subject to the royal constitutions or legislative code of the Sardinian monarchy, still retains some local regulations and privileges, which date back to the 17th century, and are of considerable importance.

The county of Nice is divided into fourteen mandati, or administrative divisions, each of which has a town as its centre.

Nice in the twelfth century was a municipal commonwealth, and allied to Pisa; but the kings of Aragon, having become masters of Provence, established their supremacy over the town by force, and styled it the capital of their kingdom, and its other municipal franchises, A.D. 1188. But Provence having passed from the Aragonese to the dominion of the counts of Anjou, in consequence of the marriage of Beatrice, daughter of Raymond Berenger IV. of Aragon with Charles of Anjou, brother of Louis IX. of France, in 1246, the county of Nice became subject to the Anjou dynasty of Provence and Naples.

During the war of the disputed succession of queen Joanna I. of Naples, the people of Nice had recourse for protection to Aragon, and, after the death of King Louis XI. of France, and the reigns of Louis XII. and Francis I., the town became a dependency of the kingdom of Naples, and soon after his competitors of the house of Anjou, renounced their claims upon Nice to Amadeo VIII., duke of Savoy and prince of Piedmont. The county of Nice has remained independent, with brief interruptions of temporary subjection, subject to the house of Savoy under whose rule it has attained its present state of prosperity.

The county of Nice has produced several distinguished men, among others the amiable poet Passerini, who died at Nice in 1746; the celebrated ladies, Madame de Stael and Madame de Genlis, and, under whose influence, the town became a centre of intellect and art.

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important ecumenical council held in the Christian church. It was not called by the emperor Constantine, for the purpose of settling the Arian controversy, after he had in vain attempted to reconcile Arius and Alexander, the leaders of the two opposing parties in that dispute. The council met at Nicea in Bithynia, in the year 325 A.D., and sat probably thirteen years. The term the council was attended by bishops from every part of the East; but few came from Europe, and scarcely any from Africa, exclusive of Egypt. According to Eusebius, there were more than 250 bishops present, besides presbyters, deacons, and others. Some writers give a larger number. The enmity of the emperor Constantine to the Arians was the deciding cause of the council, with the addition of the emperor's authority, which had been consistently opposed to Nicephorus, who was accused of having poisoned him, reigned as guardian to her infant son, but finding herself insecurc on the throne, she invited Nicephorus to come to Constantinople, and promised him her hand. The emperor then married, Nicetas, and assumed the title of Augustus, A.D. 963. He quickly attacked the Saracens, and drove them out of Cilicia and part of Syria. In 968, Ohlo I., emperor of Germany, sent an embassy to Nicephorus, who received it in an uncivil manner. [Liturvan, i. 41.] But his arrogant manner, and his wife, the unprincipled Theophano, having formed an intrigue with John Zimisces, an Armenian officer, conspired with him against her husband. Zimisces, with other conspirators, was introduced at night into the bedchamber of Nicephorus and murdered.

NICEPHORUS III, called Botanistes, an old officer of some military reputation in the Byzantine army in Asia, revolted against the emperor Michael Ducas, A.D. 1078, and with a body of troops, chiefly composed of Turkish mercenaries, marched to Constantinople, and offered to dethrone and kill the emperor, Michael. It is certain that Michael, regarded as the natural son of Nicephorus, was slain, and Nicetas, who is said to have been killed, is believed to have been Nicephorus. He reigned four years, and murdered his son Constantine. He had been appointed emperor by his wife, the unprincipled Theophano, having formed an intrigue with John Zimisces, an Armenian officer, conspired with him against her husband. Zimisces, with other conspirators, was introduced at night into the bedchamber of Nicephorus and murdered.

The emperor Constantine, after the year 806, was accused of having been, as it were, a heretic, and his son, Nicephorus, was deposed, and banished to a monastery, where he died in a short time, A.D. 1081. [Alexis Comnenus.]

NICEPHORUS, made patriarch of Constantinople in the year 1090, was accused of having been a heretic, and was cast out of the church. He was afterwards reconciled to the church, and reigned for a short time as archbishop of Ptolemais, and was afterwards banished by the emperor Michael V., and died in exile, A.D. 1091.

NICEPHORUS, a physician mentioned by Dioscorides (Phrey, lib. i., p. 2, ed. Spreng.), is among the list of most of the writers of the Middle Ages, having written on the art of medicine. He lived under the emperors Constantine VII. and Nicephorus II. and is mentioned in the list of the bishops of Constantinople, in the sixth century.

NICETAS, a physician of Constantinople, supposed to have lived in the reign of Isaac Comnenus, about the middle of the eleventh century, of whom nothing is known, except that he formed the collection of surgical works that was destroyed at the present moment. He wrote in this language, which are three copies, one at Florence and two at Paris; but part of it was published at Florence, 1754, fol., with the title "Graccorum Chirurgicar Libri, Sorani unus de
Fracturum Signa, Orbisae duo de Francis et de Luxatia: e Collezione Niccolò ab antiquissimo et optimo codice Florentino descripti, conversi, atque editi ab Antonio Cocchi. &c. Perhaps he is the person to whom Theophylact's letter is addressed, who is styled 'Patrician to the King,' larpök basilik. (Fabri, Bibl. Gr.; Haller, Bibl. Chirurg.)

NICHÉ (from the Italian nicchia, signifying also a nook), a small recess, or concavity in the face of a wall for the purpose of receiving a statue. The Romans, as is natural, have originated with the Romans, for scarcely any thing of the kind occurs in the architecture of the Greeks themselves, who rarely employed statues in any way as external decorations to their edifices, sculpture being so applied by them as a secondary ornament. Thus, in the case of Christian architecture, on the contrary, niches are of very frequent occurrence, and often enter very largely into a design as principal features in the composition. Niches are usually square in plan, and rounded, that is, covered by the quarter of a hollow sphere, owing to which the shadow within the concavity produces a highly beautiful curve. They are however occasionally made square in plan, in which case they are square-headed (as in the case of the National Gallery, London); but square-headed niches are sometimes made circular in plan, though rounded ones are never made square. Niches exhibit still greater diversity in the modes of decorating them; in this country it has usually been the fashion to leave them quite plain and unadorned, not quitting the niche without a statue, vase, or some piece of sculpture in it, is rather a questionable feature, suggesting to the spectator the absence of the object which it is intended to receive; therefore, as has been remarked, not very much better than an empty frame. The hanging up of paintings in niches without a statue, vase, or some piece of sculpture in it, is rather a questionable feature, suggesting to the spectator the absence of the object which it is intended to receive; therefore, as has been remarked, not very much better than an empty frame. The hanging up of paintings or pictures, which diminishes the impropriety that though the frame can be hung up when the picture is provided for it, a niche must be provided first, and a statue can be placed in it afterwards at any time. Moreover, if they are decorated they are usually placed within a square-headed panel, having architraves and other dressings like those of windows, and therefore admit of as much variety of design as windows themselves. Many Italian architects have adorned them with sculpture, thus converting them into small tabernacles (as in the upper order of the side elevations of St. Paul's), or have otherwise bestowed so much enrichment upon them that the statues within them are almost lost.

The relative size of niches, that must depend upon the circumstances of the design. When decorated like window niches are generally of the same dimensions as the windows themselves, if there are any in the composition; but cases may occur where it may be advisable to make a niche of a design more important and larger than any of the windows in it. On the other hand, small plain niches between windows, when the intervals between the latter are very considerable, may be employed with good effect, and so as to produce a pleasing degree of variety and contrast; as a general confusion, and thus converting them into small tabernacles (as in the upper order of the side elevations of St. Paul's), or have otherwise bestowed so much enrichment upon them that the statues within them are almost lost.

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Nicholas, a deacon of Rome, was elected pope, mainly through the influence of the emperor Louis II., who was then at Rome, in April, A.D. 558, and was consecrated in St. Peter's church in presence of the emperor. The new pope, with Roman pontiffs to Charlemagne and his successors as emperors of the West had greatly widened the breach between the Roman see and the Byzantines, and the schism of Photius completed the separation of the two churches. Nicholas excommunicated Photius, who in return sent an embassy at Constantinople, anathematized Nicholas and his followers, asserting at the same time, that 'since the seat of the empire had been removed from Rome to Constantinople, the primacy and privileges enjoyed till then by the Roman see had become transferred unto that of the new capital.' The legates of Nicholas returned to Rome without effecting anything. In the year 865 Nicholas had the satisfaction of receiving into the bosom of the church Bogoria, king of the Bulgarians, with part of his nation. But on the other side he involved himself in a serious dispute with his former patron the emperor Louis. At the request of Nicholas, the latter had had Theobert his wife and married his cousin, Walthyr, which Nicholas took as a reason to depose the abbot the church of Saint-Teobert, and assembling a council at Rome, A.D. 864, in which the two archbishops were deposed, and Lotharius's divorce and marriage were declared null. The emperor Louis took the form of a protest against the council, and henceforward endeavored to oblige the pope to revoke the sentence. An affair took place in front of St. Peter's church between the soldiers of the emperor and the Pope's followers, but the emperor soon after consented to withdraw his troops. In the year 867: having been made the need of the emperor Michael, succeeded him on the throne, and shortly after restored Ignatius to the patriarchal see and banished Photius. Nicholas himself died at Rome in the same year, and was succeeded by Adrian II. Nicholas has left a number of works, principal, of which are printed in Coleti's 'Collection of Councils.'

Nicholas II., Gerard of Burgundy, succeeded Stephen IX. as pope, A.D. 1059. An opposite faction chose John bishop of Veletri, who took the name of Benedict X., but after having been made pontiff, the only thing he did was to resign his claim. Nicholas assembled a council at Rome, which passed a decree concerning the mode of electing the pope. This important decree is in the collection of councils, and also in Muratori's 'Rerum Italicarum Scriptores.' Nicholas quarrelled with Charles of Anjou, king of Naples, and determined to enter into negotiations with his son-in-law, who occupied Southern Italy, and bestowed on Robert Guiscard the duchy of Apulia and Calabria, as a fee of the Roman see. He died soon after, in 1061, and was succeeded by Alexander II.

Nicholas III., Giovanni Gaetani, of a noble Roman family, succeeded John XXI. in 1277. He prevailed on the emperor Rudolf of Habsburg, who was little acquainted with Italian affairs, to confirm the various grants of territory in the states of the popes, which were in a miserable condition, and to give his consent to the union of the churches of Rome and Bologna. In 1288 he prevailed on the emperor to receive a gift of lands in the principality of Moravia, and was received with great kindness. He was succeeded by Celestine V. Nicholas left several theological works.

Nicholas V., Tommaso da Sarzana, was elected pope after the death of Eugenius IV. in 1447. He soon after his election, obtained from the emperor Sigismund the cession upon Felix V., who had been elected pope by the council of Basle in 1439, to abdicate in his favor, and thus restore peace to the Christian world: Felix did this with a good grace in the year 1449. [Addam VIII.] At the assembly which he held, and which was convened by the pope in the name of the college of cardinals, the church, the sovereigns and states of Italy seemed to forget their feuds, at least for awhile, and Italy enjoyed several years of internal peace, a rare occurrence in the history of that little country. The pope, who was a patron of learning, availed himself of this period of rest to encourage MSS., and to have translations made of the Greek classics and of the fathers of the Eastern church; he received and patronised learned men from various countries, and especially from Greece, at that time overpowered and devastated by the Turks; and he embellished Rome with sumptuosity as
of an editor than an author, or where a large share of the labour was borne by some of his many literary friends. Few men had more friends of this description or deserved them better.

It will be seen by what has been said that the turn of Mr. Nichols's mind was to that species of literature which is called antiquarian, but which is in fact minute or refined history, dealing with equal attention with things of modern and of ancient date. The same turn of mind is perceptible in the works of Mr. Nichols, which may or may not be regarded as part of the work. The other work, which was strictly periodical, is 'The Gentleman's Magazine,' which passed, in a great measure, into the hands of Mr. Nichols in 1778, and continued under his direction till the time of his death. 

He greatly raised the reputation of the work, and during the more vigorous period of his management it was remarkable for the value of some of the articles which it contained, and for the preservation of a multitude of minute pieces of information, which will be valuable to the future inquirer into the literary or political history of the period.

Mr. Nichols passed a life honourable as it was useful, and as it was industrious; experiencing only one calamity, the fall of the bubbles, but that a severe one,—the destruction by fire of his printing-office and warehouses, with the whole of their contents, on the 8th of February, 1808.

NICHOLS, JOHN, the printer, born 1745, died 1826, one of the most respectable, valuable, and useful men of the age in which he lived. He was born and educated at Ialington, and originally intended for the navy, but the death of a relation led his friends to change their design, and when not quite thirteen he was placed with Bowyer, who has been called the last of the really learned, in order that he might become a man of his master, and was intrusted by him with the management of his printing-office. In 1766 he was taken into partnership by Mr. Bowyer, and Mr. Bowyer dying, in 1777, the whole business fell into his hands.

In 1782 he published an important volume, entitled 'Biographical and Literary Anecdotes of William Bowyer, Printer, F.S.A., and of many of his Learned Friends,' a work which, far more than any other work of his time, and far more than any work which had appeared since the 'Antiquarian' of Mr. Wood, abounded in biographical information at once authentic and original. This work, many years after, was reprinted and greatly enlarged, appearing in six octavo volumes, entitled 'Literary Anecdotes of the Eighteenth Century;' and many volumes were added, and they have been followed at intervals by five large octavo volumes more, of the same kind of material, with the new title, 'Illustrations of Literary History.' These works will be the great fund on which critics in time to come will draw for account of the men in the eighteenth and beginning of the nineteenth centuries, just as the 'Athene' is the fund of biographical knowledge for the men of the sixteenth and seventeenth centuries. But after all something more is wanted than both these works supply.

We regard this as the work on which Mr. Nichols's literary reputation will chiefly rest; and next to it may be placed his 'History of the County of Leicester,' which is in six large folio volumes. This was in the time of publication of Pococke of Rostaing, and the faithfulness with which he corrected any mistakes in which he had been led by the age. The work is in general very exact and accurate, and the chief defect seems to be that the worthy author seems not to have known so well what might be omitted in a work of that kind, in order to enumerate a place in it. To the people of the county it must be invaluable.

In 1788 he published, in two volumes quarto, 'The Progresses and Processions of Queen Elizabeth, happy occasion of the original happy occasion of the original opportunity for the introduction of much minute historical information, and much that illustrates the manners of a period on which we always look with a peculiar kind of interest. In 1797 he published 'Historical Fragments of the Manners and Customs of the Antient Times in England.'

Having mentioned these, we shall forbear to notice any works of which he is rather to be considered in the light of an editor than an author, or where a large share of the labour was borne by some of his many literary friends. Few men had more friends of this description or deserved them better.
only acid which readily acts upon nickel. Nickel occurs in meteoric iron and aërolites. [Aërolites.]

The uses of nickel are very limited, and until within a few years it was scarcely employed at all; but it is now very usefully employed, and to a considerable extent, in forming an alloy with copper and zinc, known by the name of German silver. Its oxides impart a green colour to glass and porcelain.

The ores of nickel are few in number:—

**Sulphuret of Nickel. Capillary Nickel.**—This occurs in regular hexagonal capillary crystals. Primary form a rhomboid; colour brass-yellow or greyish; lustre metallic; hardness, scratches nails, and is scratched by falper.

Opaque, brittle.

It is soluble in nitric acid, and before the blow-pipe, when strongly heated, gives a malleable and metallic button.

It occurs in Wales, Cornwall, Saxony, &c.

**Analysis by Arfwedson:**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphur</td>
<td>34.26</td>
</tr>
<tr>
<td>Nickel</td>
<td>64.33</td>
</tr>
</tbody>
</table>

98.61

**Arsenuret of Nickel. Copper Nickel.**—Occurs crystallized, botryoidal, reniform, and amorphous. Primary form a right rhombic prism; structure compact, fibrous; fracture uneven, conchoidal, splintery; hardness 5-0 to 5-5; colour yellowish and greyish red; lustre metallic. Opaque. Specific gravity 7.655.

Before the blow-pipe on charcoal emits an alliaceus smell, and melts.

It is found in Cornwall, Saxony, Bohemia, &c., and also in South America.

**Analysis by Pfaff:**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel</td>
<td>48.90</td>
</tr>
<tr>
<td>Arsenie</td>
<td>46.42</td>
</tr>
<tr>
<td>Iron</td>
<td>0.34</td>
</tr>
<tr>
<td>Lead</td>
<td>0.56</td>
</tr>
<tr>
<td>Sulphur</td>
<td>0.80</td>
</tr>
</tbody>
</table>

97.09


Specific gravity 6.129.

**Silicate of Nickel. Pimelite.**—Occurs massive, and investing other minerals. Colour apple yellow or yellowish green. It is earthy, dull, opaque, soft and greasy to the feel. It is fusible before the blow-pipe, but becomes of a dark-grey colour.

It is found in Sweden and the Harz.

**Analysis by Klapiroth:**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica</td>
<td>35</td>
</tr>
<tr>
<td>Oxide of Nickel</td>
<td>15.62</td>
</tr>
<tr>
<td>Alumina</td>
<td>5.10</td>
</tr>
<tr>
<td>Lime</td>
<td>0.40</td>
</tr>
<tr>
<td>Magnesia</td>
<td>2.25</td>
</tr>
<tr>
<td>Water</td>
<td>37.91</td>
</tr>
</tbody>
</table>

96.28

**Arsenate of Nickel.**—Occurs powdery on the surface of arsenuret of nickel, and massive. Colour greenish white and green. Opaque.

Found in Allemand, Hesse, &c.

**Analysis by Stromeyer:**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic acid</td>
<td>36.97</td>
</tr>
<tr>
<td>Oxide of Nickel</td>
<td>37.35</td>
</tr>
<tr>
<td>Water</td>
<td>24.32</td>
</tr>
</tbody>
</table>

98.64

We proceed now to the artificial compounds of nickel.

**Oxygen and Nickel** combine in two proportions, forming the protoxide and sesquioxide or peroxide.

**Protoxide of Nickel** may be obtained by adding potash or soda to a solution of any salt of nickel, by which a green hydrate is precipitated; this, heated to redness, loses water and becomes a dark-coloured salt which may also be procured by heating nitrate of nickel to redness. It is insoluble in water, readily dissolved by most acids, and yields green solutions. It is not reducible to the metallic state by heat alone, and is not attracted by the magnet. Oxiide of nickel is insoluble in potash or soda, but readily dissolves in ammonia; the solution has a fine azure-blue colour, and is decomposed by potash or soda. It is the base of all the salts of nickel.

It is composed of

- One equivalent of oxygen 
- One equivalent of nickel

**Equivalent** 36

**Peroxide of Nickel** may be obtained by adding a solution of chlorine (or hypochlorite) of lime to one of nitrate of nickel, or by transmitting chlorine gas through water in which hydrate of nickel is suspended. The peroxide thus obtained is of a black colour, insoluble in dilute acids, potash, or soda. When added to a mixture of ammonia and its carbonate, azotic gas is evolved, and the peroxide, becoming protoxide, is dissolved. At a red heat it yields oxygen gas, and with hydrochloric acid gives out chlorine gas, and forms chloroide of nickel.

It is composed of

- One and a half equivalent of oxygen 
- One equivalent of nickel

**Equivalent** 40

**Chloride of Nickel** is formed by dissolving either the protoxide or peroxide of the metal in hydrochloric acid. Its colour is a fine emerald-green; and by evaporating the solution, green filamentous crystals containing water are formed. This salt deliquesces in a moist atmosphere. When deprived of water it has a yellow colour and a micaceous appearance; it is volatile, and may be sublimed at a high temperature. The solution is decomposed by the alkalies and their carbonates, but ammonia added in excess re-solves the precipitate at first formed.

Chloride of nickel is composed of

- One equivalent of chlorine
- One equivalent of nickel

**Equivalent** 28

The fluoride, bromide, and iodide of nickel are not much known, and are of but little importance.

**Sulphur and Nickel** combine in two proportions, forming the sulphide and disulphuret.

**Sulphuret of Nickel** is prepared either by heating metallic nickel or the oxide with sulphur; or it may be procured by adding a hyposulphurate to a solution of nickel, or to a certain extent by passing hydrochloric acid gas into a neutral solution of nickel. The precipitated sulphuret is nearly black, dissolves in hydrochloric acid with the evolition of hydrochloric acid gas; the sulphuret precipitated by the dry way is of a greyish-yellow colour, and requires aqua regia (or nascent chlorine) for solution.

**Sulphuret of nickel consists of**

- One equivalent of sulphur
- One equivalent of nickel

**Equivalent** 44

**Dissulphuret of Nickel** may be prepared by transmitting hydrogen gas over sulphate of nickel at a red heat. Its colour is lighter, and it is more fusible than the sulphuret, and consists of

- One equivalent of sulphur
- Two equivalents of nickel

**Equivalent** 72

**Phosphuret of Nickel** is formed by the action of phosphorus upon nickel heated to redness; the result being compound is whitish, brittle, and is decomposed when exposed to heat and air. It is more fusible than the metal, and according to Pelletier, is composed of 17 phosphorus + 82 nickel; while Lampadius states its composition to be 10 phosphorus + 87 nickel.

**Cyanoide of Nickel** is prepared by adding a soluble cyanide to a solution of nickel, or when hydrocyanic acid is mixed with a solution of nickel.

**Ferrocyanide of Nickel** is a greyish or greenish com
pound, which is precipitated when ferrocyanide of potassium is added to the salts of nickel.

Alloys of Nickel. — Arsenic readily combines with Nickel, and the compound remains undecomposed at a very high temperature. It does not obey the magnetic laws.

Potassium and Nickel combine by fusion.

Antimony and Nickel form an alloy of a lead-colour.

Zinc and Nickel form a white brittle alloy, which enters into the composition of the brass used in shipbuilding. Tin and Nickel give rise to a white brittle alloy, which burns at a high temperature.

Iron and Cobalt unite with nickel, but the resulting alloys are but little known.

Nickel must not be combined with copper, zinc, and nickel form a white alloy, of later years much employed under the name of German silver.

The salts of oxide of nickel are of course numerous, but we shall describe only a few of them.

Nickel may be prepared by dissolving either the metal or its oxide in dilute nitric acid. The solution is of a fine green colour, and by evaporation yields a deliquescent salt, which is not applied to any particular purpose. It probably consists of 1 equivalent of nitric acid 54.1 equivalent of oxide of nickel 36.90; the crystals however contain a considerable quantity of water, but chemists are not agreed as to the exact proportion.

Sulphate of Nickel is easily procured by dissolving the oxide of nickel in sulphuric acid; a green salt is obtained, which readily crystallizes, and in two different primary forms; the cause of the difference has not been ascertained. The crystals consist of nearly 1 equivalent of pure nickel; 4.87 One equivalent of oxide of nickel 36 Seven equivalents of water 63

Carbonate of nickel is an insoluble compound readily decomposed both by heat and acids.

Nickel forms double salts with potash and with ammonia. The peculiar properties of the salts of nickel are, that they are decomposed by the alkaline carbonates, and the precipitate which forms is dissolved by a blue solution, which is decomposed by potash and soda, but not by their carbonates.

Nicobar Islands, TIR, are situated in the Indian Ocean, between 5° 50' and 9° 20' N. lat. and 98° 50' and 98° 10' E. long. They consist of nine larger islands and some smaller ones, and are on that account called by the Malayans Sambilang, that is, Nine Islands. The two most southern are called Great and Little Nicobar. Great Nicobar is about 40 miles long and 20 miles wide. It abounds with forests and with the largest and wildest variety of birds. It is a favourite station of the raccoons, and is separated from another by a strait, forming one of the safest and most commodious passages to the shores of the Nicobar. The Nicobars are composed of a large mass of granite, and the soil consists of black chips and dead animal matter which has been derived from the surrounding mountains, and has been carried by the ocean into the interior. The inhabitants are of the aboriginal race, and belong to the Australian Negros, as these people are found in many of the islands of the Indian Archipelago and in the Andaman Islands. The Danes twice tried to form a settlement in the harbour of Nonowry, in 1756 and in 1768, but they abandoned their plan after a few years, as the success of the experiment was delayed by the sickliness of the climate. Some missionaries remained there till 1792, but as they did not succeed in the conversion of the natives, they returned to Tranquebar.

(Hamilton; Fontana; Colebrooke, in Asiatic Researches, vol. ii., iii., iv.)

NICOLAI, CHRISTOPHER FREDERICK, a writer to whom German literature is greatly indebted, not only on account of what he himself contributed to it from his own pen, but also what he did for others by establishing several critical journals, and exciting the talents of others. He was born at Berlin, March 21th, 1733, where his father was a bookseller. At the age of sixteen, just as he was beginning to make some proficiency in his studies, he was obliged to go to Frankfort, on the purpose of learning the bookselling trade; yet such was his eagerness for information, his love of reading, and his perseverance, that he employed every moment of leisure, his evenings, and the early part of every morning, in study, and, notwithstanding other studies, from which he made the most of his talents, he was a proficient in Greek, Latin, and English, and likewise acquired a knowledge of some parts of mathematics and philosophy. He was an instance of what may be accomplished by self-instruction, which great men may be the least ashamed to confess; it has to contend with, has in its favour which all advantages can hardly make amends for, namely, willingness and resolution to learn; while at the same time, if it occasionally may lead astray, self-instruction leads also to innumerable inquiries, without which that is almost impossible, a professed school. He was born at Berlin, March 21th, 1733, where his father was a bookseller. At the age of sixteen, just as he was beginning to make some proficiency in his studies, he was obliged to go to Frankfort, on the purpose of learning the bookselling trade; yet such was his eagerness for information, his love of reading, and his perseverance, that he employed every moment of leisure, his evenings, and the early part of every morning, in study, and, notwithstanding other studies, from which he made the most of his talents, he was a proficient in Greek, Latin, and English, and likewise acquired a knowledge of some parts of mathematics and philosophy. He was an instance of what may be accomplished by self-instruction, which great men may be the least ashamed to confess; it has to contend with, has in its favour which all advantages can hardly make amends for, namely, willingness and resolution to learn; while at the same time, if it occasionally may lead astray, self-instruction leads also to innumerable inquiries, without which that is almost impossible, a professed school.

On his return to Berlin, in 1752, his attention to business did not interrupt his self-imposed studies, of which both English and German poetry then formed a large part of his reading; and in 1755 he produced his Letters, wherein he impartially discussed the pretensions of the two literary sects headed by Bodmer and Gottsched. This work excited considerable attention, and led to his intimacy with Lessing. After the demolition of his business, he withdrew himself from the business, leaving it to his brother, and determined to content himself with his own slender means, in preference to the pecuniary advantages to be reaped by sacrificing his literary leisure and enjoyments. He now produced his first single editions, which have had an end to this short interval of tranquil study, he being obliged to carry on the business for the benefit of the family in general. But while on the one hand this only increased his diligence and economy of time, it led, on the other, to entering upon literary plans which he had before projected. In conjunction with Mendelssohn, he had already commenced (1777) the Bibliothek der Schonen Wissenschaften, one of the earliest and best belles-lettres journals in the language, which was afterwards continued, till the end of 1803, under the title of the neue bibliothek, &c. With Lessing and Mendelssohn he established, in 1759, the briefe der neuesten litteratur, and in 1763 projected the Allgemeine deutsche bibliothek, of which periodical he continued to be editor till its death, and of which he was the principal contributor. More than other original works, he contributed much to it himself, but the management alone of such a periodical, so eminently useful in its day, shows him to have been most indefatigable, as in the mean-while he did not lose sight of his other avocations; and contributed mightily to the advancement of German studies. Among them are his Anecdotes of Frederick the Great, 1788; a most excellent and elaborate Description of Berlin and Potsdam, 3 vols., 1786; the Life and Opinions of Sobaldus Nothanner, 1793, a sort of private history, which went through various editions, and among which a French translation, entitled the Life and Opinions of Sempronius Gundlert, in 1793, intended to set the doctrines of Kant and his disciples in a ridiculous light. Besides these, his Essay on the Temples, his Re-
marks on the History of the Rosicrucians and Freemasons."

Herod's his 'Tour through Germany,' &c., to say nothing of a number of smaller pieces contributed by him to different journals, prove the variety of his information and the activity of his mind. He died in 1811, at the age of 78.

Nicolattians, a sect of heretics, who arose in the first and second years of the reign of Herod the Great, in Rev., ii. 6, 15. They appear, from the statements of the early writers, to have held the doctrines of the Gnostics, and to have lived impiously. It is generally supposed that 'the doctrine of the Nicolaitans' (Rev. i. 15) is the same as the doctrine of the Gnostics, 'to eat things sacrificed to idols, and to commit fornication.' Indeed some critics suppose the name Nicæa in this passage to be merely translated from Ὑπεραμβαλλων and used symbolically, deriving the former word from ὑπερ and αμπαλλω, and the latter from the synonymous Hebrew words יִתְנָה and נָכָה. (Robinson's Greek Lexicon.)

Letter to the New Testament.) The early writers trace the origin of this sect to Nicolas the Deacon (Acts, vi. 3), but some of them acquit him of holding the sentiments of the Nicolaitans, and ascribe the rise of the heresy to an improper advantage taken of some incautious expressions which he had used. (Moseheim's Ecc. Hist.; Winne's Biblisches Realwörterbuch; Fritzsche's Archiseelsch.)

Nicolaus Myrrepsus (Gr. ὅς ἰποσυχής, 'the ointment-maker'), author of a work, 'De Compositione Medicamentorum,' written in Greek, but of which hitherto only a Latin translation has been published. Very little is known of his life, and of the little the greatest part is to be gleaned from hints and expressions scattered up and down in his own work. He is generally considered to be the last of the Greek medical writers (if indeed, as Fromanteel, his barbarous language deserves to be called Greek), and his date can be ascertained with tolerable precision. His work was probably compiled towards the end of the thirteenth century, A.D., as he is quoted by Petrus de Abano, who died in 1316, and also by Matthew Syrva of Paris, whose work, 'De Pedibus divinis, of which both he and other physicians to Robert king of Naples, and wrote very early in his reign, which began in 1309. He himself mentions Mesue (sec. xxii., cap. 117), who lived in the twelfth century; Michael Angelus, who is probably the first emperor of the Palaeologi, and began to reign A.D. 1260 (sec. i., cap. 255); Pope Nicholas (sec. ii., cap. 9), who seems to be the third of that name, and who died A.D. 1280; and Joannes Actuaricus (called Dominus Joannes, sec. x., cap. 103; and Magister Joannes, sec. xi., cap. 169), who seems to have been generally supposed to have flourished in the thirteenth century. He appears to have visited or lived at Nicæa (sec. xxiv., cap. 12) and Alexandria (sec. i., cap. 241; sec. xvii., cap. 17; sec. xxiv., cap. 68), whence he is sometimes called Nicolaus Alexandrinus. He is generally attributed the dignity of Actuaricus (Georg. Acropol.). Several passages in his work prove that he practised as a physician (sec. i., cap. 65; sec. xvii., cap. 17, &c.), and Georgius Acropolius, his contemporary, mentions him (Hist. Byz., ed. Paris, fol. 1651, cap. 39, p. 34) as eminent in his profession, but as very ignorant of natural philosophy.

He was evidently a person of great piety, as appears throughout the whole of his work, though in many places it deserves rather to be called the novicii. He orders the patient in some places (sec. i., cap. 419, and sec. i., cap. 405) to repeat three Patres, Credos, and Avea; he often prescribes the baptismal water (sec. vii., cap. 6; sec. xiv., cap. 6), as a powerful medicine; he directs a verse out of the Psalm (sec. i., cap. 405) to be 'written on paper on the first day of the week before sunrise, and to be tied on the right arm, as a remedy against menstruation; and many other examples of the like or even greater absurdity might be adduced. It is not difficult to find enough that is absurd in the work; but in the parts which are not sensibly, yet upon the whole it is not of much value. It consists of an immense number of medical formulæ, arranged alphabetically, and divided into forty-eight sections; it is in a large folio, and 1500 leaves, but the book is not extant in any copy except a fragment from the manuscript, which is now in the library of the Duke of Rutland. (Josephus, Antiq., xvi. 2.)

Nicolaus Prepositus, a native of Damascus (Δαμασκηνος, a native of Damascus [DAMASCUS, NICOLAUS]), wrote a general history in Greek, containing the reign of Herod the Great. (Antiq., xvi., 7, 1.) This gives the following character:—'For living in his kingdome and with him (Herod), he composed his history in such a way as to gratify and serve him, touching on those things only which made for his glory, and even glossing over many of his actions which were plainly unjust, and concealed them with all zeal. And wishing to make a specious excuse for the murder of Mariamne and her children, so cruelly perpetrated by the king, he tells falsehoods respecting his incontinence and the plots of the young men. And throughout his whole history he has contributed and written just actions, while he zealously apologizes for his crimes.'

(1.) In 144 books; for Josephus refers to the 123rd and 124th. (2.) To the events of the lifetime of the youthful Augustus. (3.) By the name of 'the Life of Augustus,' extant, and an autobiography is attributed to him, but it is probably not genuine. On two occasions Nicolaus was an advocate before Agrippa of certain Jews who were molested in the exercise of their peculiar customs by the Greeks among whom they lived. (Josephus, Antiq., xii. 3, 2; xiii. 2.) In the year 6 B.C. he was sent by Herod on an embassy to Augustus, who had taken offense against him because he had led an army into Arabia to enforce certain claims which he had put upon Sylla, the prime minister of the king of Arabia, and the real governor of the country. (Josephus, Antiq. xvi., 9.) Nicolaus, having obtained the audience of the emperor, accused Sylla of having defended Herod in a skilful speech, which is given by Josephus. (Antiq. xvi. 10, 8.) Sylla was sentenced to be put to death as soon as he should have given satisfaction to Herod in order to claim the right of inheritance, which Nicolaus, having probably from the history of Nicolaus himself, appears to have exaggerated the success of his embassy, for Sylla neither gave any satisfaction to Herod, nor was sentenced to death executed upon him. (Josephus, Antiq. xvi. 3, 2.)"
NICOLAY, BARON LUDWIG HEINRICH, born at Strasburg, December 29th, 1737, was, though not of first line, one of the most pleasing among the minor poets of Germany. His style is easy and natural, his versification flowing, and his narrative interesting. All these qualities display themselves in his 'Romantic Tales,' which, although their subjects are chiefly derived from Aristotle and Bojardo, are remodeled and treated with great originality, and manifest considerable fancy, skill in the management of the story, and truth of expression, both in the comic and serious parts. Of his abilities, both as a didactic and satiric writer, proof is afforded by his 'Poetical Epistles,' which he presented to the empress Maria Theresa on her twenty-fifth birthday with not a little of his manner. His Fables, too, in minor Tales, though not always of his own invention, show genuine talent, and frequently no small power of humour.

Nicolaï resided for the greater part of his life at St. Petersburg, where he was invited, in 1769, to undertake the office of preceptor to the grand-duke (afterwards emperor) Paul. Besides being honoured with several Russian orders, he was made director of the Imperial Academy of Sciences in 1798, which office however he afterwards resigned; and in 1801 was raised to the rank of imperial privy-counselor. He died in 1829.

NICO'MACHUS, a physician of Stagira in Macedonia, and son of the family of the Asclepiads, flourished about 400 B.C., Ol. xcv. 1. He was the friend and physician of Amyntas, king of Macedonia, but is now only known as the father of Aristotle. (Ammonius, and Diogenes Laerterius, in "Vita Aristot.;" Suidas, in voce Nicomachus.)

NICOMED'ES (Nīkoōmedēs), the name of several kings of Bithynia.

1. NICOMEDES I. succeeded his father Ziphobates, B.C. 273. His succession was disputed by his brother Zibodates; and he called in the Gauls to support his claims, B.c. 277. With their assistance he was successful; but his allies became his masters, and the whole of Asia Minor was for a long time overrun by these barbarians. [GALATIA.] He probably died about B.C. 250, and was succeeded by his eldest son Zelas.

2. NICOMEDES II., surnamed Epiphanes, succeeded his father Prusias II., B.C. 149. He accompanied his father to Rome, B.C. 167, where he appears to have been brought up under the care of the senate. (Liv. xlv. 48.) Prusias became agent, of the popular price of his son, and anxious to secure the succession to his younger children, formed a plan for his assassination; but Nicomedes, having gained intelligence of his purpose, deprived his father of the throne, and subsequently put him to death.

Nicomedes remained during the whole of his long reign a faithful ally, or rather obedient subject, of the Romans. He assisted the Romans in their war with Antoninus, brother of Attalus, king of Pergamus, B.C. 137; and he was applied to by Marcus for assistance during the Cimbrian war, about B.C. 103. During the latter part of his reign, he was involved in a war with Mithridates, of which an account is given in the life of that monarch. [MITHRIDATES VI., vol. xv., p. 289.]

Mithridates, near the river Annum, in Paphlagonia (Strabo, xii., p. 562); and he himself was again expelled from his dominions, and obliged to take refuge in Italy. At the conclusion of the Mithridatic war, B.C. 64, Nicomedes returned to Nicomedes. He died B.C. 74, without children, and left his kingdom to the Romans. (Monnem, as quoted by Photius; Livy; Justin; Appian's "Mithridatic War;" Strabo, vol. iii., p. 663. Cassaub.)

Under the Roman emperors Nicomedes became one of the chief cities of the empire. Pausanias speaks of it as the principal city in Bithynia (v. 12, §5); but under Diocletian, who chiefly resided there, it increased greatly in extent and populousness, and became inferior only to Rome, Alexandria, and Antioch. (Liban., "Ora. viii., p. 203; Lacant., "De Morie Persec., c. 17.;" It was almost entirely destroyed by an earthquake in the time of Julian, but it was again rebuilt with great splendour and magnificence, and recovered nearly its former greatness. (Amian. Marcelli, xxii. 9; xxii. 13; xvii. 7.) It is called at the present day Ismid, and is still a town of considerable importance; but it contains few remains of antiquity.

NICOSIA. [Cyprus.]

NICOTIA'NA TABAC'UM, an annual plant, of which the leaves are used in a variety of forms and ways, and also in medicines. The dried leaves are of a long, rectangular, smooth, somewhat glutinous, and of a brown colour, with a peculiar stupefying odour, and an acid, nauseous, bitter taste. The processes of maceration and partial fermentation, and admixture of different substances, render it more agreeable in the dried than in the fresh state. The analysis of tobacco shows its chief ingredients to be:—1st, a tobacco-camphor, called nicotian, or nicotianin, which crystallizes, and is solid at the ordinary temperature of the air; has a faint odour of tobacco, with a warm, bitterish, aromatic, but not acrid taste, and is not possessed of any odour if applied to the nostrils, it causes sneezing; and if a grain be taken into the stomach, it creates uneasiness and giddiness. It is called by some the acid principle of tobacco, inasmuch as it is most probably the principle which-when the herb with, 2nd, nicotian, an alkaloid, which, like conia, does not exist at ordinary temperatures in a solid form, but in a fluid and volatile state, having an oily appearance.

The empyreumatic oil of tobacco appears to be formed on the destruction of the principal ingredient of tobacco, and is naturally in the leaf, but is probably formed at the expense of the nicotine. It does not therefore exist in the infusion of tobacco, the mode of action of which differs in several respects from the other forms in which it is employed. The active part of the oil can be removed from it by washing with weak acetic acid. The products of tobacco when burnt, as in smoking, are:—carbonate of ammonia, nicotian, empyreumatic oil, soot, and some gases.

Nicotian seems to be the formidable principle of tobacco when used in the solid form, or as an infusion; and the empyreumatic oil, when it is smoked, or when obtained by destructive distillation. The action of nicotine is highly poisonous; a quarter of a drop will kill a rabbit; one drop can destroy a dog. It is distinguished from the other alkaloids obtained from the tribe of the Solanaceae by not causing dilatation of the pupil; the external application of it to the eye produces other very alarming narcotic symptoms. The tenth part of a grain put into the eye of a cat brings on strong convulsions, with foaming at the mouth, quick respiration, accompanied with rattling in the throat and rapid palpitations of the heart, which can be heard at a considerable distance, staggering, and paralyzation of the hinder extremities, which symptoms disappear in an hour. The empyreumatic oil, in the quantity even of a single drop placed on the tongue, excites convulsions and coma, without affecting the heart. It may prove fatal in two minutes.

Tobacco is a very powerful agent, the active principles
of which is extracted by water, either in the form of infusion or decoction. The local effects of tobacco-leaves, or any preparation of them, are those of an acrid substance; hence when taken internally they cause vomiting and purging, pain of the stomach and intestines, followed by inflammation and ulceration. The external application occasioned irritation of the part, and, if kept long in contact with it, inflammation: snuffing the prepared powder induces sneezing and increased secretion of mucus; chewing or smoking it causes increased secretion of saliva, with diminished appetite in those unaccustomed to its use.

Moreover, the irritative character of the properties results from the absorption of the active principles. It is immaterial by what channel they are introduced into the circulation: the same consequences follow, and affect on the same principle the internal canals of the lungs, heart; and on the other, the nervous centres of the brain and spinal chord. The former show themselves by nausea, vomiting, purging, pain and inflammation of the stomach, and here and there of the intestines; on the lungs, by the slower, painful, and irregular respiration; and after death the tissue of the lungs is found to be thicker, more injected with blood, and accumulations or extravasation of it. The action on the heart, or probably the nerves of the heart, manifests itself by irregular, generally slower pulsations, and by the heart losing its natural action and beats after death; but the chief secondary action is on the brain and spinal chord, and this succeeds the external as well as internal application of it, but most so after injection into the veins, or when the blood is chilled. Vasomotor deficiency, a feeling like intoxication, staggering, trembling, general weariness of the muscles, with convulsive contractions of them, or cramps, general insensibility, sleepiness, and death are the consequences.

Tobacco must therefore be considered as a narcotics acrid poison. Habit reconciles the system to its action when used moderately, but nothing can secure the body from its irritative property and its ultimate absorption when employed in excess or incontinently. The injection of uniform strength, as ordered in the Pharamcopoeia, is to be prepared, and thrown up in divided portions, under the direction and in the presence of the medical attendant. In case of over-dose, vital stimulants, such as brandy, are of use. Nicotine, must be regarded as the poisonous principle of tobacco has been recommended as a diuretic in some cases of dropsy; but it is a dangerous remedy, and seldom employed.

Against the common use of tobacco for snuffing or smoking it is perhaps useless to declaim. Chewing it is limited in a great measure to sailors, and it were to be wished that the practice of smoking were similarly restricted. The evils which follow indulgence in these customs are not very obvious but the injury results in most cases certain.

ANTIDOTES; ESchars.

NICOTIAN, the principle which gives the characteristic odour to tobacco. It is a concrete oil, and may be obtained by the following process—dilute six pounds of tobacco-leaves with twice their weight of water, till half has come over. To the distilled liquor add twice its weight of water, and again distil; and this operation is to be repeated. A fatty substance will be found floating on the surface of the distilled liquid in very small quantity, and this is nicotine.

Its properties are, that it has the smell of tobacco, and a bitterish taste. It is insoluble in water, but readily dissolves in alcohol and in ether; dilute acids do not dissolve it, but petroleum spirit dissolves it. By heat it is of course volatilized, and if water be present, without change. It does not appear to have been analyzed.

NICOTINIA, an alkalii which exists in the different species of tobacco. It is procured by the action of sulphuric acid upon tobacco-leaves, and subsequent treatment with alcohol, and afterwards with lime or magnesia, and various complicated operations. Other processes have also been adopted.

The properties are, that it crystallizes in small plates, which, by exposure to the air, absorb moisture sufficient to become a transparent colourless liquid. When cold it is nearly inodorous, but when heated it yields a vapour, the smell of which resembles that of turmeric; it is tasteless, or so disagreeable, and somewhat caustic, and remains long in the mouth; even when cooled down to 21° it retains its fluidity. Its alkaline properties are evident by its action upon test-papers; and when heated to 215° its vapour dissolves in alcohol, ether, and amyl alcohol; its specific gravity is 1.048. The salts which it forms with alkalies are colourless, and are usually soluble in water and alcohol, but not in ether. Virginia tobacco yields about one-tenth of its weight of nicotine, and there is no one kind which gives much more. It has not been analyzed.

spectacular effects of this substance were, in the words of the Count, "...an extraordinary phenomenon of nature..."
Niebuhr, whose life was prolonged to a great age, survived his return from his Oriental travels for nearly half a century. He had, about 1772, some thoughts of undertaking another journey of discovery, at the instance of the minister of Foreign Affairs of the Danish East India Company, then reorganized and resuscitated into a trading company; but the health of his son was then in such a state as to render him unfit for such an enterprise.

Niebuhr, however, continued to pursue his studies, and published a number of books. In 1780, he was elected a foreign member of the Royal Society of London, and in 1781, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1783, Niebuhr was elected a fellow of the Royal Society of London, and in 1784, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1785, Niebuhr was elected a fellow of the Royal Society of London, and in 1786, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1787, Niebuhr was elected a fellow of the Royal Society of London, and in 1788, he was chosen a member of the Academy of Sciences of St. Petersburg.

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In 1799, Niebuhr was elected a fellow of the Royal Society of London, and in 1800, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1801, Niebuhr was elected a fellow of the Royal Society of London, and in 1802, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1803, Niebuhr was elected a fellow of the Royal Society of London, and in 1804, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1805, Niebuhr was elected a fellow of the Royal Society of London, and in 1806, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1807, Niebuhr was elected a fellow of the Royal Society of London, and in 1808, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1809, Niebuhr was elected a fellow of the Royal Society of London, and in 1810, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1811, Niebuhr was elected a fellow of the Royal Society of London, and in 1812, he was chosen a member of the Academy of Sciences of St. Petersburg.

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In 1819, Niebuhr was elected a fellow of the Royal Society of London, and in 1820, he was chosen a member of the Academy of Sciences of St. Petersburg.

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In 1847, Niebuhr was elected a fellow of the Royal Society of London, and in 1848, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1849, Niebuhr was elected a fellow of the Royal Society of London, and in 1850, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1851, Niebuhr was elected a fellow of the Royal Society of London, and in 1852, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1853, Niebuhr was elected a fellow of the Royal Society of London, and in 1854, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1855, Niebuhr was elected a fellow of the Royal Society of London, and in 1856, he was chosen a member of the Academy of Sciences of St. Petersburg.

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In 1859, Niebuhr was elected a fellow of the Royal Society of London, and in 1860, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1861, Niebuhr was elected a fellow of the Royal Society of London, and in 1862, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1863, Niebuhr was elected a fellow of the Royal Society of London, and in 1864, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1865, Niebuhr was elected a fellow of the Royal Society of London, and in 1866, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1867, Niebuhr was elected a fellow of the Royal Society of London, and in 1868, he was chosen a member of the Academy of Sciences of St. Petersburg.

In 1869, Niebuhr was elected a fellow of the Royal Society of London, and in 1870, he was chosen a member of the Academy of Sciences of St. Petersburg.
he should go to Göttingen, and study under Heinek
He had already had communication with the last-named scholar, and he collied him some MSS. after his return from
Hamburg, in 1792.
He studied at Kiel from Easter, 1794, to the spring of
1796. Here he formed an intimacy with the family of Dr.
Hensler, professor of medicine, which had the greatest influence over subsequent events. The widow of Dr.
Hensler's son, a lady from Dithmarsh, was residing in
his house, and Niebuhr's acquaintance with her ripened into a friendship which lasted till his death. By far the greater
part of Niebuhr's numerous letters which he wrote to her after his return from London and Edinburgh, in 1794, Dr. Hensler was visited by the mother and
sisters of his daughter-in-law, and Niebuhr soon formed
an attachment to one of the latter, Amalie Behrens, who
subsequently became his wife.
Niebuhr, and his friend Count Schimmelmann, the Danish
minister of finance, proposed to Niebuhr to become his pri
dvate secretary. His father accepted the offer for him, and
thus Niebuhr was introduced into the best circles of his native city. His bashfulness and studious habits however rendered him unhappy in this situation, and he soon ex
changed it for that of supernumerary secretary to the Royal
Library, which he entered upon in May, 1797, and held till
April, 1798, when he paid a visit of two months to his father, and then sailed for England. He resided in
London and Edinburgh for about a year and a half, and
returned to Holstein towards the end of 1799. About the
middle of April, 1800, he went to Copenhagen, and, after
a stay of a few weeks, obtained the appointment of secretary to the court of Denmark, and of secretary and accountant to the African consulate.
The income arising from this appointment enabled him to
marry Amalie Behrens, in May, 1800, and he resided with
her at Cölln, till the year 1806, performing his duties with
the greatest punctuality and diligence, and to the entire
satisfaction of his employers. He did not however alto
gether neglect his literary pursuits; they formed his even
ning amusement, and he found time in the midst of his
busiest occupations to give lessons to his friend Count Schimmelmann, and to translate part of an
Arabic history of the conquest of Asia. In the spring of
1803 he had to make a journey into Germany on public business connected with the administration of the Danish
finances. An offer was made to Niebuhr, at the end of
1805, to enter into the service of the Prussian government,
and his dissatisfaction at the prospect of having some one appointed over his head, and the advantages held out by
the situation proposed to him, induced him to accept the
situation of joint-director of the first bank at Berlin, with
the promise of further promotion.
He arrived at the Prussian capital on the 5th October,
1806, shortly before the battle of Jena; but had to
return on the 7th, and again on the 12th of October, and
every day he was obliged to take flight with all the other officials.
He resided till April, 1807, at Memel and Königsberg,
and then became one of the secretaries of the prime minister Hardenberg, having chiefly to attend to the supply of the army with provisions and ammunition. This situation
led him to the head-quarters of the army till the battle of Friedland, after which he went to Riga. The provisions of the peace of Tilsit having exacted the dismissal of Hardenberg, his office was put into commission, which consisted of Von
Altenstein, Von Schön, Stägemann, Von Siewert, and
Niebuhr. Upon the accession of Stein to the administra
tion, Niebuhr was despatched to Amsterdam to negotiate a
loan, and he resided there till April, 1809. In December,
1809, he was appointed joint-director of a new joint-stock
company for the administration of the funds. This brought
him to Berlin, where, and at Königsberg, he resided through
the winter of 1809-10. The opposition to a financial plan
of his made him however more anxious than ever to retire
from public life; and after some fruitless attempts on
the part of the government to retain him in office, he exchanged his public situation for the post of historiographer to
the king, vacant by the death of J. Von Müller. About the
same time he was elected member of the Royal Academy of
Science.

The opening of the university of Berlin, at Michaelmas,
1816, brought forward Niebuhr as a lecturer on Roman
history; and the lectures which he delivered in this and
the following year were published. Among the new con
cepts of those new combinations and discoveries for which
Niebuhr will be best known to posterity. The time which he
spent at Berlin, from 1810 to 1813, seems to have been the
happiest periods of his life. He formed a society of
philologists, consisting of Spalding, Buttmann, Hendorff,
Schleiermacher, Ancillon, Süvern, Savigny, Schmedes,
and Nicolovius, and with these distinguished scholars he
spent all his spare hours. He felt very acutely the loss
of his last-named friend, to whom he devoted the last
volume of his 'History of Rome,' which he sent to Holland on public business. He returned to Berlin in the
October of that year, and resided there till the sum
mer of 1816, when he was again sent to Holland on public business. He returned to Berlin in the
October of that year, and resided there till the sum
mer of 1816, when he was again sent to Holland on public business. He returned to Berlin in the
October of that year, and resided there till the sum
mer of 1816, when he was again sent to Holland on public business.
second volume was delayed by a fire, which burned his house to the ground and consumed all the manuscript with the exception of a leaf that he happened to have lent to a friend, and it did not appear till the end of 1836. Niebuhr’s sensitive mind was deeply affected by the Revolution, which took place in Paris in the July of that year, and by the subsequent revolt of Belgium: he looked forward with the deepest anxiety to the probable consequences of those events: he expected the renewal of that devastating war which had so lately been in his experience, and feared that his own happy dwelling-place, by the Rhine, would be the first to suffer from the invaders. These considerations preyed upon his spirits, and he sunk under the continued agitation of mind produced by them. He died, on the 13th of September, 1836. A volume of appreciation of Niebuhr by his many friends was published after his death, in which the author has adopted, it may be doubted, on the other hand, whether many scholars, both in Germany and England, have not been too willing to acquiesce in all Niebuhr’s results, to adopt whatever he has written, and some even to regard as established truths unsanctioned by evidence or directly opposed by express testimonies. Some recent German writers have indeed taken a middle course; they adopt the general views and critical method of the historian, but they find much in the details that is defective, and they desire to be the true spirit in which Niebuhr’s work should be studied. The young students of Roman history should be told that they will prove themselves worthy disciples of him, not by his method but by his results; it must be impressed on them that the original authorities should in all cases be carefully sifted and compared, and that they cannot rely implicitly on the authority of their master in cases where the theory depends on the mere ardent imagination of Niebuhr, and his power of combining and constructing, sometimes led him to form a complete theory before he had examined all the evidence; one consequence of which is, that, under the influence of his own work, his admirers may attain certain results, which the words do not contain, and at other times arbitrarily reject evidence when it interferes with his own hypothesis. It is true that this same power and his intuitive sagacity have sometimes enabled him to supply a link in a chain of evidence, or to suggest a hypothesis that is supported by the evidence that follows it, in the hope of the pieces fitting together. It is true that it may happen that a hypothesis which is based on the evidence of a single writer, and which is not supported by the evidence of any other writer, may be accepted because it is not contradicted by any other evidence, but it is not true that the hypothesis is certain in all cases. It is not the business of Niebuhr’s admirers to adopt every hypothesis which he has suggested, but it is their business to sift and compare the evidence, and to attempt to prove the correctness of the evidence that supports the hypothesis, and to reject the hypothesis when the evidence does not support it. It is not the business of Niebuhr’s admirers to accept every hypothesis which he has suggested, but it is their business to sift and compare the evidence, and to attempt to prove the correctness of the evidence that supports the hypothesis, and to reject the hypothesis when the evidence does not support it.
visited him at Bonn, in 1839 (see Blackwood's Magazine, for January, 1836, p. 26, &c.); a warm testimony to the benevolent spirit of his character and the goodness of his heart is furnished by Lieber, in his 'Reminiscences of Niebuhr:' and we see the whole man, in all his relations, social, literary, and political, in the highly-interesting collection of his letters, in the course of his life (Letters and Private Correspondence of Baron Fridtjof Barthold Georg Niebuhr, aus Briefen desselben, &c. Hamburg, 1838, vols. 1 and 2).

The following is a list of Niebuhr's philological works:

1. Römische Geschichte, 2 vols. 8vo., Berlin, 1811. This edition was translated into English, by Mr. Walter, London, 1827.


3. Oratio maiorum ad Filiem, 8vo., Rœcl. Let. 1816.


5. Römische Geschichte, Erster Theil, Berlin, 1827; Zweiter Theil, Berlin, 1830; Dritter Theil (posthumous), 1832. The two first volumes have been translated into English by J. C. Hare and Connon Thwirl: 1st vol. Lond. 1828; 2nd edition, 1831; 2nd vol. 1832. The third volume is still untranslated. Of this translation Niebuhr himself has expressed his opinion in dedicating his Byzantine Histoire to the printer, 'as a token of his esteem for his works.'

6. Corpus Scriptorum Historiae Byzantinae, editio emendatior et cursor, cosilio B. G. Niebrihrius, C. Aurelii Symmachii & aliorum. Odense, 1828. Of this edition Niebuhr published the 'Agathis,' and joined with Becker in publishing 'Dexippus,' 'Ranapius,' and other shorter histories, which appeared together in one volume.

7. Kleine Historische und Philologische Schriften, Erste Sammlung, 1829. This was the first volume of a collection of his shorter essays, which had appeared in the 'Transactions of the Berlin Academy' or in the 'Rheinisches Museum.' It also contained his biography of his father and his Copernicus biography. Niebuhr made much use of his own articles, and some of them came out in the 'Classical Journal' and the 'Philological Museum.' The essays 'On the Geography of Herodotus' and 'On the Scythians' have appeared in a separate form at Oxford.

Besides these works, which he published in his own name, Niebuhr has conferred a most important benefit on Roman jurisprudence by his discovery of the fragments of Gaius. (Gaius.) He was unable to stay at Verona long enough to see the MSS. himself, and as he saw only the widow Honer (Lebenemahr, ii, p. 240), was obliged to content himself with the merit, which would soon be forgotten, of having made the discovery, not by accident, but after a diligent search. Niebuhr interested himself very much in the preservation of palimpsests, and in consequence became involved in a controversy with this rival discoverer, Mai, with regard to some emendations which he had proposed in certain fragments discovered by Mai, which emendations were subsequently confirmed by a MS. at Turin. Mai charged Niebuhr with having borrowed his emendations from the MS., and it was not without difficulty that Niebuhr prevailed upon the authorities at Rome to grant an imprimatur to his justification.

R. H. St. Cecily, JULIAN URSYN, a modern Polish writer, to whom the literature of his country is under considerable obligations for his exertions in its behalf, and for the nationality he infused into it. Neither was it as an author alone that he distinguished himself, for he took an active part in public affairs, and gave indubitable proofs of his patriotism. As nuncio of Lithuania, he displayed his political talents in the diet, 1788-92; and in 1794 became not only the military commander, but the attached friend of Koskiusko, with whom he was taken prisoner and sent to St. Petersburg, where they remained till they were liberated by the emperor Paul on his accession. He afterwards accompanied Koskiusko to the United States, where he became personally acquainted with Washington, respecting whose personal character and domestic habits he has furnished many minute particulars in his 'Krouts Washomose de Zeyiu Gen. Washington.' His poetical works are rather numerous, and consist of six books of Fables; narratives, and miscellaneous pieces (among which are translations of Milton's 'Allegro' and 'Penseroso'); and 'Spawdy Hartyeno,' a series of thirty-three historical songs, wherein the poet-patriot chants the heroic deeds of his countrymen. Of these historic hymns, which first appeared in 1816, and have since gone through several editions, a German version, however, has been made. 'Niemen' was added by Baron F. Gaude. His dramatic productions consist of several comedies and tragedies, some in verse and others in prose; among which may be mentioned 'Widaysalaw,' a tragedy, in five acts; 'Cismir the Great,' a prose drama, a satire on the French, 'Jadwiga, Queen of Poland,' an opera; also a translation of Racine's 'Athalie.' His prose works consist of 'Oriental Tales;' 'A History of the Reign of Sigismund III', 3 vols., 1819; 'Memoirs relative to the earlier History of Poland,' 3 vols., 1825; 'Liebe i Trost,' 3 vols., 1825; 'Die Abhandlung der Wiener Geschichte,' 2 vols., 1827; 'Jan y Tocyna.' (John of Tocyn), an historical romance, the scene of which is laid in the court of Sigismund Augustus (sixteenth century). In the course of it many of the personages of that period are introduced, and the nations and costume of the time are described with great minuteness.
butury of the Upper Niemen, and the Yasiola, an affluent of the Pyrene. This canal of Oginsky is more than 30 miles long, but as its dimensions are small, and both the rivers which supply it are only navigable for small craft, it is not much used.

There is perhaps no river in Europe whose floods rise to such a height and whose inundations are so destructive as the Niemen. Many circumstances unite to produce this effect. Snow to the depth of four to six feet falls every winter on the country which is drained by it; and as the course of the river in general lies from east to west, this immense quantity of snow, being dissolved in so short a time as ten or fourteen days, causes the river to rise to 20 or 30 feet above its general level. Thus, long afterwards, the river is in all its extent very insecure, and its current slow, the water can only be carried off in a much longer time, and hence it accumulates in its bed and inundates the adjacent lands to a distance of several miles in many places, and causes great damage.

NIEUWNTYT, BERNARD, was born 10th of August, 1654, at Westgraafdyk, a village of North Holland. There are short notices of his life in Nicoen (Mémoires des Hommes Illustres, tom. xiii., p. 350), and in the periodical entitled 'École Savante,' April 1719, tom. viii., p. 297, from which the following particulars are taken.

His education was conducted with a view to his entering the church, of which his father was a minister; but evincing an early indifference to an ecclesiastical life, he was left by his parents to his own inclinations and pursuits. He commenced the study both of law and physic, having previously applied himself to the study of logic, in order the more effectually to restrain and fix his imagination, and acquire the habit of reasoning correctly. He appears to have executed several compositions and essays, in which circumstances, and the general amiability of his character, may be attributed his influence in the provincial states, as also in the government of the town of Purmerend, wherein he resided, and of which he was burgomaster. As a physician he was highly esteemed, and at the age of 37, in 1780, was made a magistrate. He was a zealous and not very able supporter of the doctrines of Descartes, and his mathematical writings, though now valueless, obtained a temporary popularity in consequence of their author being one of the first opponents of Cartesianism, and it was remarked of Montesquieu, that 'in the same manner as the Montefeltres designate a mere tissue of absurdities, were replied, to first, by Leibnitz (Leipzig Acta, 1694), and afterwards by MM. Bernoulli and Herman, the latter of whom showed, to the satisfaction of mathematicians, that their advances were erroneous. He was a scholar, which he had written so freely. A work of much greater merit was published by him at Amsterdam in 1715, in one volume 4to., entitled 'Les Treize ou Contemplations du Prince des Gens de l'Art.'

The object of the author is first to illustrate and explain the laws of the human passions. He descrites the benevolent Creator, by contemplating the mechanism of the heavens, the structure of animals, &c.; and secondly, to remove the doubts of Deists concerning revealed religion. It was originally published in Dutch, but has passed through several editions in German, French, and English. The English editions, translated by Chamberlayne, under the title of 'The Religious Philosopher,' appeared at London in 1719-19, and 1729, in 3 vols.

NIEUWLAND, died May 17, 1718, and not in 1730, as stated in Hutton's Biographical Dictionary. The following are the titles of his mathematical works:

2. Analysis Infinitorum, seu Curvilinearum Proprietates ex Polygonorum Natura deducuntur. Amst., 1695, 4to.

NIEUPOORT, a fortified town in West Flanders, six miles north-west from Furnes, and eighteen miles west-south-west from Bruges, in 51° 8' N. lat. and 2° 44' E. long. The town stands about a mile from the sea, on the Ypale. The port, which is the only place, consists of a narrow creek, in which vessels are led aghround at low-water; this creek forms a quay about 500 feet in length outside the walls of the fort. Nieuport has water communication with Furnes, Oostende, and Bruges, by means of the Ypale, the Yser, and the Ostend and Bruges canal. The town is regularly fortified and capable of sustaining a long siege; a great part of the surrounding district may be laid under water. There are 1700 houses, a fine church, a chapel, a town-hall, and several hospitals. The population in 1836 amounted to 2847.

NIEUWLANDT, WILLEM VAN DEN, a Dutch author and artist, born at Antwerp in 1654, at first followed the pursuits of art, but after his return, when he fixed himself at Amsterdam, he chiefly painted architectural compositions—ruins, baths, mausoleums, triumphal arches, and other subjects of that class. These works of his pencil, in which he showed low design, and painted the ancient monuments of Rome, were eagerly sought after, and many of them were engraved. He himself also possessed considerable skill in engraving and etching.

His literary works consist of six tragedies, namely, 'Soul, Chrestus Dominus,' 'Nero,' 'Livius,' 'Chrestus,' and 'Sophonisba;' all of which display talent. The 'Nero,' which was brought out at Antwerp in 1618, at the expense of the city, met with extraordinary success. He also wrote a poem entitled 'Von den Menach' (Man, or the Vanity of the World), wherein he expatiates on the emptiness of all human pursuits. He died at Amsterdam in 1635.

NIEUWLAND, PIETER, who has already been mentioned in the account of the literature of the Netherlands (p. 161), was one of the most extraordinary men among his contemporaries. His works, which are so numerous, and to whom and himself there were only a very few years' difference as to the time of their deaths, as well as that of their births, raised him himself from an obscure station to literary eminence as a poet, and not as a poet alone, but also by his various works in philosophy and in another science, of which he was born in 1764, at Diemermann, where his father was a carpenter, and a man of some information for one in his class of life. From him he acquired some insight into arithmetic and geometry; read all the books which the house possessed of seven years' standing, and who had himself some pretensions to be a poet. By him the boy was taken into his own house and placed under the tuition of his brother, the celebrated Jeronimo De Bosch, by whom he was instructed in Greek and Latin, in both which he soon made great proficiency, as well as in other studies. He was sent to the University of Amsterdam, where he had Toliuss and Wytsenbach for his instructors, and where, in 1780, he gave proofs of his learning and acquirements, by a dissertation on Terence, and another on the Stoic philosopher Musonius. After attending Ruhnken's lectures at Leyden on theology and philosophy, and so distinguished himself, that in 1787 the post of head master at the school of Utrecht was offered him. In the following year he increased his fame by the publication of some of his poetical pieces, including that entitled 'De Oriens,' one of his noblest productions. In these, and his subsequent poems, there are abundant marks of real genius and originality, striking thoughts and ideas expressed with great power of language. Their chief defect is, that many of them possess little interest of subject, being of the class denomi- nated 'occasional poems,' and therefore charm only by their beauties of execution. But as his translations from Ancree are univalued for their spiritualleness and elegance, so is his elegy on the death of his wife for its simple and touching pathos: and if their mere beauties of execution be considered, the inferiority to the insipidness and tediousness of Petrarch's amatory strains, that poem may be allowed to charm, though written not by an Italian, but a Dutchman, and though inspired, not by a fanciful platonick passion, but by so homely and old-fashioned a feeling as sinern conjugal affection. His noble poem 'De Bienomy, produced a wonderful change in that species of writing: full of feeling and thought, they showed themselves eminently superior to the correct but mechanical and spiritless productions then generally received as poetry.
Nieuwland's high poetical talent was the more remarkable because combined with other talents which have generally been considered incompatible with an ardent imagination. In conjunction with Van Swinden he published a nautical almanac; and also wrote a treatise (1787) on the means of ascertaining the longitude at sea, which has been frequently reprinted, and is still considered, with the work on navigation of which only the first volume appeared (1792), his death preventing him from completing it. An account of his other scientific and philosophical writings may be found in his Eloge by Van Swinden. It is related of him that by a quickness of apprehension as to be able to make himself master of the contents of any work by merely running over its pages. That he possessed very extraordinary mental powers and rapidity of apprehension admits of no doubt, when the extent of his studies and attainments is compared with the shortness of his life and the variety of his avocations. In 1789 he was lector in navigation and natural philosophy at Amsterdam; and in 1792 he became head teacher at Leyden, in the mathematical and physical sciences; and in 1793 professor of mathematics, physics, architecture, hydraulics, and astronomy. He died on the 14th of November, 1794, about eight months after the death of his wife and child.

NIEVRE, a department of central France, bounded on the north and north-east by that of Yonne, on the east by the Côte-d'Or, on the south-east by that of Saône et Loire, on the south by that of Allier, on the west by that of Cher, and at the north-west extremity, for a short distance, by that of Loire. The greatest length of this department is from the north point of the Côte-d'Or, to the Loire near Nevers, 133 miles; the greatest breadth, at right angles to the length, is from the bank of the Allier, near St. Pierre-le-Moutier, to the village of St. Aignan, near Saulieu (Côte d'Or), 52 miles; the area is calculated at 1,257,727 acres, or 250,613 hectares, and the population, in 1831, was 262,521; in 1836, 297,550, showing an increase in five years of 15,029 persons, or more than 5 per cent., and giving rather more than 113 inhabitants to a square mile. In size it is above the average of the French departments, and contains a population by no means considerably below the average. It may be compared in area with the English county of Devon, which however it rather exceeds: in amount of population it falls very far below Devonshire, and scarcely equals the much smaller county of Suffolk. The density of population it falls below any English county except Cumberland and Westmoreland. Nevers, the capital, is in 47° 10' N. lat. and 3° 10' E. long., 133 miles in a direct line south by east of Paris, or 140 miles by the road through Fontainebleau, Montargis, and Orléans.

The heights which separate the basin of the Loire from that of the Seine traverse the department from north-west to south-east: in the south-east part they are called the mountains of Morvan, being included in the district of that name, which comprehends the eastern side of the department. [MORVAN.] This eastern portion of the department is the more rugged portion, and consists chiefly or wholly of primitive rocks, granite or schistose; the western part is covered by beds of the secondary strata, which interpose between the red marl and the chalk: the valleys of the Allier and the Loire, in the southern extremity of the department, and the valley of the Loire, in the north-western extremity, are occupied by the supracretaceous formations. The district is rich in deposits of granite, sandstone, and of sandstone suitable for grindstones: yellow ochre and potters clay are also procured, but the chief mineral treasures of the department are iron and coal. The department is the seventh in the order of productivity in coal, the quantity of coal produced (1834) being 175,000 tons, and of iron ore (1834) 30,162 tons. This quantity was raised from one pit, in connection with which (in 1834) 400 labourers were employed, viz. 292 in the pit, and 108 without it. There were in the same year 64 iron-works, in which were 26 furnaces for making pig, and 15 forging and 7 forging for producing forging iron and 7 forging for producing forging steel. Charcoal was the fuel chiefly used, but coal was also employed.

The principal rivers are the Allier, the Loire, and the Yonne. The Allier enters the department on the south side, where it forms 24 miles to Nevers; at Nevers to the junction of the Allier, on the western border, a little below Nevers, and from thence along the border of the department 44 miles to below Neuvy; in all 78 miles.

The Allier has no part of its course within the department, but flows for about 24 miles along the south-western and western borders, until its junction with the Loire. These two rivers are navigable throughout that part of their course which appertains to this department. The Yonne (a feeder of the Seine) rises in the mountains of Morvan, near Château Chinon, and joins the Loire, near Tours, as we have seen. It is entered by Château-Chinon, Corbigny, Tanay, and Clamecy, into the department of Yonne. Its course in this department may be estimated at 56 or 58 miles: it is not navigable.

The other rivers and are tributaries of the more important streams above mentioned. The Tanay (15 miles long), the Avron (about 40 miles long), the Arc (32 miles long), the Nièvre (25 miles long), and the Nohain (25 miles long), join the Loire; the Baye, the Lande, and the Avron, join the Yonne. The Cure (which has a course of 50 miles, but only part of it in this department), the Oissaire, the Angnikson, and the Beuvron (20 miles long), flow into the Yonne; the Chalais flows into the Cure, and the Sary into the Beuvron.

There are several lakes or pools, but none are very large. The principal are that of Entrains, near the head of the Nohain (5 miles long, 1 or 2 miles broad), and those at the heads of the Avron and the Bayes, in the centre of the department.

The canals and are the canal lateral to the Loire from Digné (Saône et Loire) to Briare (Loire), of which about 36 miles are in this department; and the Niverne Canal, extending from the Loire, at the junction of the Avron, to the Yonne below Oissaire, and then through the Yonne to the canal lateral to the Yonne from Nevers to Loringt, which crosses the Loire by the bridge at La Charité, passes through La Charité, Varzy, and Clamecy, and then to another road branches to Avallon. The road from Nevers to Auxerre passes through Premery and Montenipois, to Clamecy, where it unites with the road from Bourges. Other roads from Nevers pass through St. Aignan, Montjoie, Château-Chinon, Saône, both in the department of Saône et Loire; and the other along the valley of the Loire by Décize to Chamilly and Mécon, also in the department of Saône et Loire. The departmental roads had an aggregate length of 303 miles. The road from Nevers to Pithon, 26 miles, is unfinished. The aggregate length of the by-roads, principal and secondary, amounted to 2400 miles. The surface of the department is estimated at nearly 1,700,000 acres, of which nearly 730,000 acres are under the plough. The produce in grain is considerably below the average of France, but, from the smallness of the population, it is combined with the growth of potatoes sufficient for the supply of the inhabitants. The corn land is chiefly in the western part of the department, in the valley of the Loire and in the principal catchment of the rivers Masin or mixed corn, then oats, then barley; all these are grown to a considerable extent. The quantity of buckwheat and maize grown is but trifling, especially of buckwheat. The quantity of potatoes is considerably above the average of France, and the general opinion of the agreeable nature of grass-land is considerable: the meadows and other grass enclosures amount to between 160,000 and 170,000 acres, and the commons and open pasture-grounds to about 35,000 acres. The number of oxen is nearly twice the average of France, which is a great indication of the prosperity of the Paris market. The number of cows is rather below the average of the departments, unless regarded with reference to the population, when it rises considerably above the average. The number of heifers is above the average likewise. The best part of Morvan consists of the chief grazing-land. Sheep are not numerous; neither are they of good breed, though daily improvements are introduced. The long-wooled English sheep have been...
naturalised in the department. The number of horses is large in relation to the population. Oxen are employed in the labours of the field. There is a government establishment of stallions at Corbigny. Game is abundant in the department, the streams and lakes abound in fish, and a few truffles are found.

The vineyards occupy about 24,000 acres, little more than half the average extent of the vineyards of the French departments; they are however very productive, but the wine is only of ordinary quality, except the white wine of Pouilly on the Loire, which, in 1836, 2775 tons have been landed in the United Kingdom. A consideration of the supply of firewood for Paris comes from this district; the wood is made up into large bundles or 'trains,' by twisting the branches without rope or other fastening. In this way it is floated down the Yonne, the affluent of which are pent up on and below Cosnes; the Pougues is a near requisite for the transit of these floating bundles, as they descend the Yonne and the stream becomes wider are augmented by fresh ascensions. The department is divided into four arrondissements, as follows:

<table>
<thead>
<tr>
<th>Area in sq. Miles</th>
<th>Population in 1836</th>
<th>Pop. in 1866</th>
<th>No. of Communes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nevers</td>
<td>875</td>
<td>88,821</td>
<td>96</td>
</tr>
<tr>
<td>Château Chinon</td>
<td>650</td>
<td>58,543</td>
<td>61</td>
</tr>
<tr>
<td>Clamecy</td>
<td>570</td>
<td>70,381</td>
<td>72</td>
</tr>
<tr>
<td>Cosne</td>
<td>542</td>
<td>66,850</td>
<td>68</td>
</tr>
</tbody>
</table>

There are 2637 in 2521 in each of the four arrondissements, under a justice of the peace.

In the arrondissement of Nevers are—the towns of Nevers (population in 1836, 16,967) [Nevers], Décize or Decizee (pop. 2115 town, 3068 whole commune), and Pouilly, all on the Loire. Décize is the capital of the canton, the city of the department, and Derné, between the Loire and the Allier; and La Forte Langeron, on the Allier. At La Machine near Décize are the great coal-works of the department already noticed. There are also glass-works in this neighbourhood. The Pougues is a near requisite for the transit of these floating bundles, as they descend the Yonne and the stream becomes wider and are augmented by fresh ascensions.

In the arrondissement of Château Chinon are—Château Chinon (pop. in 1831, 515 towns, 667 whole commune); in 1836, 5152 commune) [Cosne], Neuvy, Pouilly-le-Fort (pop. 3071 whole commune), Meves, and La Charité (pop. 4450 town, 5086 whole commune) [Charité], on the Loire; St. Amand, on the Vrille; St. Vrain, on a small stream which is turned into the Vrille; St. Louth, on the Loire, 3566 whole commune), on the Nohan; Champlemy, near the head of one branch of the Nièvre; and Montenécour and Prémery, on the other branch of the Nièvre. Some geographers have considered Neuvy to be the Noviodunum of Caesar's 'Commentaries,' a position which is given to the town of fixing at Nevers. Pouilly is a handsome town in a district which produces a heavy wine, compared, but without reason, with Chablis. There are iron-works at Meves on the Loire, at Amand, at Doués, and at two or three villages round La Charité. Round St. Amand are a number of potteries, at which a coarse ware is made from sandstone, and exported to Nantes and Paris.

The population, when not otherwise distinguished, is that of the whole commune: we have followed the census of 1836.

The department of Nièvre is under the jurisdiction of the Cour Royale of Bourges, and in the circuit of the Académie Universitaire of the same city. In respect of education it is part of the diocese of Nevers, and of a French department; the number of those who could read and write in the department in 1828-29 was only 20 in 100; little more than half the average number in France. The department constitutes the diocese of Nevers, and a bishopric. The commune of Nevers is a market town, and has a fair on the 1st of June. The department of Nevers is included in the fifteenth military division, the head-quarters of which are at Bourges; and sends four deputies to the chamber.

In the earliest period of the history of France the department was occupied by the Adui, except small portions on the north-west and north, which was included in the dominions of the Senones. These were both Celtic nations. The tract between the Liguria (Loire) and the Elaver (Allier) was allotted to the Boi, when the latter settled in the territories of the Adui. [Cosne] (pop. 2115 town, 3068 whole commune) was allotted to the Romans by the name Icarna. There were several Celtic or Roman towns within the limits of the department: Noviodunum, or Neriwer, or Neviow, now Nevers; Massava, now Meves, formerly written Massas; Condate, now Cosne; and Dentia, now Decise or Decisee. The Loire and Aliseinun, now Anizi, a village near Moulins-en-Gilbert. Massava and Condate belonged to the Senones, the other towns to the Adui. The territories of the Adui were extended in the Roman empire, and includ ed most of those of the Senones in Lugdunensis Quarta. On the down fall of the Roman empire, the department fell successively into the hands of the Burgundians and the Franks. In the middle ages it constituted the most part the county, or duchy of Nevers; and the political revolution formed the province or military government of Le Neriwernois or Neriweavers.

NIGER, or rather NIGIR, a name which has been given till lately to a large river mentioned by ancient as well as modern travellers, rising in the territory of Libya or Central Africa. Herodotus (ii. 32) gives an interesting account of five young men of the Libyan tribe of Nasmone, which dwelt on the coast of the Greater Syris, who proceeded on a journey of discovery into the interior. After rambling in the deserts of southeast Libya, and next to it the country of the wild beasts, they crossed the great sandy desert in a western direction for many days, until they arrived at a country inhabited by men of low
stature, who conducted them through extensive marshes to a city built on a great river which contained crocodiles and flowed towards the rising sun. This information Herodotus derived from the Greeks of Cyrene, who had it from Eteocles, king of the Ammonites, who said that the river in question was a branch of the Egyptian Nile, an opinion in which the historian acquiesced.

Strabo seems to have known little of the interior of Africa and its rivers: he cites the opposite testimonies of Poseidonius and Ardemidorus, the former of whom said that the surface of Libya was very low and latter stated that they were large and numerous (p. 530).

Pliny (Hist. Nat., v. i) gives an account of the expedition into Mauritania of the Roman commander Suenionus Paulinus, who (a.d. 41) led a Roman army across the Atlas, southwards of the desert of Wadi Nune, and thence on towards the southern side of the great Atlas through the country of Tafrell, and which lose themselves in the southern desert. One of these streams is still called Ghir, and runs through Suenionus's Morocco. The appearance of the Gis seems to be an old generic African appellation for river, of the desert which Suenionus crossed before he arrived at the Ger, it could evidently not be the great desert, which spread far to the south of the Canaries, but one of the desert tracts which lay immediately south of the Atlas. Caillié describes the inhabited parts of Draha, Tafrell, and Sejelmessa as consisting of valleys and small plains, enclosed by sterile and rocky tracts of desert country.

But besides the Ger, or Niger, of Suenionus, Pliny in several other apparent descriptions of river distinct the Niger of Ethiopia, which he perplexes with the Nile, and the same seasons, having similar animals living in its waters, and, like the Nile, producing the calamus and the papyrus. In his extremely confined account, which he derived from the authority of king Juba II. of Mauritania, he mixes up the Niger and the Nile together with other rivers, as if all the waters of Central Africa formed but one water-course, which seems to have been a very prevalent notion of old. He says (viii. 24) "Our history had its origin in the "Mauritanea, not far from the sea, that it flowed through the sandy desert, in which it was concealed for several days; that it reappeared in a great lake in Mauritania Cessarina, was again hidden for twenty days in deserts, and that the countries on the southern side of the river, separating Africa (meaning Northern Africa) from Ethiopia, flowed in the middle of Ethiopia, and became the branch of the Nile called Astapus.

The same story, though without any mention of the Niger, is alluded to by Ptolemy, Strabo, and others, and partly by Herodotus (iii. 9) adds that the river at its source was called Dara, which is still the name of a river that flows along the eastern side of the southern chain of the Atlas of Morocco and through the province of the same name, which lies between Tafrell and the town of Masrah. The Dar or Draha has a southern course towards the desert, but its termination is unknown. There is another river, the Akassa, called also Wadi Nune, on the west side of the Adrar range or eastern Atlas, which flows through the country of Draha in a western direction, enters the sea south of Cape Nune, and seems to correspond to the Daras or Daratius of Ptolemy. It has been supposed that the Daras and the Akassa were one river, but the Adrar regime seems to lie between the two. Many authorities thought that the confined range of interior Africa entertained by the ancient, one constant report or tradition is apparent, namely, that of the existence of a large river south of the great desert, and flowing towards the east. It is true that Herodotus, Strabo, Pliny, and all our other writers, 9, 9, write that it flowed into the Nile, but Mela seems to have doubted this, for he says that when the river reached the middle of the continent, it was not known what became of it. Ptolemy, who wrote later than the preceding geographers, and seems to have had better information concerning the interior of Africa, after stating that 'Libya Interior' was bounded on the north by the two Mauritians, and by Africa and Cyrenaica; on the east by Marmarica and by the Ethiopians; on the south by the Levant, 16°, and on the west by the Western Ocean from the Horse gulf to the frontier of Mauritania Tingitana, proceeds to enumerate various positions on the coast of the ocean, after which he mentions the chief mountains of Libya and the countries which lie within them, while the other countries, and six degrees to the east of it at 42° E. long. and 16° N., and makes the lake Chelonis, of which the middle is in 49° E. long., and 30° N. This river is said to be lost under ground and to disappear, forming another river, of which the western end of the lake and the eastern branch of the same, may be accompanied by the Chains, which have a lake Nubes, the site of which is 50° E. long and 15° N. lat.' The positions here assigned to the Ger and the direction of its main stream, from the Garamantean mountain to Mount Ussargula, being south-east and south-west, there is no waterway, and with the long course of the Shary of Bornou and its supposed affluent the Barb Kulla of Bourne, or perhaps the Barb Miselad of the same traveller, called Om Teyman by Burckhardt, who says that "Indigenous appellations are Gir, a large stream coming from about 19° N., for the desert which Suenionus crossed before he arrived at the Ger, it could evidently not be the great desert, which spread far to the south of the Canaries, but one of the desert tracts which lay immediately south of the Atlas. Caillié describes the inhabited parts of Draha, Tafrell, and Sejelmessa as consisting of valleys and small plains, enclosed by sterile and rocky tracts of desert country.

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to the lake.' (Leake's paper 'On the Quorra and Niger, in the second volume of the Journal of the Royal Geographical Society, 1829) with map at the end of the volume illustrating the subject.

But Ptolemy, after all, may not have been so much misinformed with respect to a communication existing between the lake and his Niger, if, as is now strongly suspected, the river Tschadda was the true river identified by him as the Niger. Exclusion from that which Ptolemy appears to have understood. It is surprising that the river Tschadda, which, at its junction with the Quorra, just above the beginning of the delta, is larger than the Quorra itself, receives, in its outfall from the lake, a body of water of an equal volume. (Captain W. Allen, R.N. On a New Construction of a Map of a Portion of Western Africa, showing the possibility of the Rivers Yea and Chadda being the Outlet of the Lake Chad, in vol. vii. of the Journal of the Geographical Society of London, No. 11, published by the Society for the Diffusion of Useful Knowledge.) If this surprise prove true, it would explain the statement of the Arabian geographers of the middle ages, Edhahl, Abulfeda, and Leo Aemius, who, that the Nile el Atla is derived from the same sources, flowed from east to west. The Tschadda then would be the river of the Arabian, and the Juliba, or Upper Quorra, that of the Greek and Roman geographers. Both were ignorant of the real terminus of the river. (Brousse and Portier.) They were, however, remarkable that the distance laid by Ptolemy between his source of the river and the western coast is the same as that given by modern observations; that Thamondocana, one of the towns on the Niger, is exactly coincident with Timbuctoo, as Sallou, which he describes, as the name of M. Caillié; that the length of the course resulting from Ptolemy's positions is nearly equal to that of the Quorra as far as the mountains of Kong, with the addition of the Tschadda or Shary of Funda, and that his position of Mount Quorra, at the southern extremity of the Nil, is very near that in which we may suppose the Tschadda to have its origin; so that it would seem as if Ptolemy, like Sultan Bello and other modern Africans, had considered the Tschadda as a continuation of the main river, though he speaks of it as an Egyptian, and sleeping at the mouth. His error of supposing the Niger to be a branch of the Nil. The mountains of Kong, and the passage of the river through them at right angles to their direction, formed a natural termination to the extent of the geographer's knowledge, in like manner as speaking ourselves the presumed, and at length the ascertainment existence of those mountains, has been the chief obstacle to a belief that the river terminated in the Atlantic.' (Leake's Paper already quoted.)

The opinions established by the Arabians geographers of the middle ages, Edhahl, Abulfeda, and Leo Aemius, that the Caprimulgidae, or night birds, are natives of the Egyptians, who look for its estuary in the Senegal, Gambia, and Rio Grande; but upon examination of those rivers the mistake was ascertained; and D'Anville and other geographers separated the course of the Senegal from that of the Niger, and from the other branches of the Nile, as the mouth, to the same extent as those of the great internal river of Soudan flowing towards the east, and called Juliba. He traced it in two different journeys, from Bammakoo, about ten days from its source, to Boussa, where he was unfortunately killed in 1826. Clapperton crossed the river at Boussa, on his second journey to Sakkato in 1820; and after his death his faithful servant Richard Lander undertook to navigate the river from Boussa to its mouth. In 1823 he proceeded from Badagy, on the coast of Guinea, northward; and this stream flowed in a southern direction, receiving several large rivers from the east; among them the noble Tschadda, after which the united stream passed through an opening in the Kong chain, and after issuing from the mountains it sent off several branches both east and west towards the coast, while he himself reached the sea by the branch known still then by the name of Rio Nun.

A fuller description of the river and its banks is given under Quorra, the object of the present article being only to elucidate the historical question whether the great river of the Libya of Herodotus, the Nigris of Pliny, the Niger of Ptolemy, and the Niger of modern geographers, be one and the same river with the Quorra. M. W. Miller, in his 'Notice de l'Afrique Septentrionale,' has maintained the negative side of the question, asserting that the antients had no knowledge of Soudan, and that the Niger of Ptolemy was one of the rivers flowing from the Atlas. But Col. Leake has ably answered him, and supported the affirmative in the paper above quoted.

NIGER, CAIUS PESCENNIUS, appears to have been of humble origin; but his great military talents recommended him successively to the notice of Marcus Aurelius, Commodus, and Pertinax, by whom he was employed in offices of trust and honour. He was consul together with Septimius Severus, and obtained the government of Syria. On the murder of Pertinax, a.D. 193, the empire was exposed for sale by the Praetorian guards, and was purchased by Didius Julianus, whom the senate was compelled to acknowledge as emperor. The people however did not tamely submit to this indignity; and three generals, at the head of their respective legions, Septimius Severus, who commanded in Pannonia, Claudius Albinus, in Britain, and Pescennius Niger in Syria, refused submission to the union of the empire and the reduction of the Pretorians, and each claimed the empire. Of these, Niger was the most popular, and his cause was warmly espoused by all the provinces of the East. But he did not possess the energy and activity of his rival Severus. Instead of hastening to Italy, where his presence was indispensable, he quietly remained at Antioch, while Severus marched to Rome, dethroned Didius, and made active preparations for prosecuting the war against him in person. By his inactivity, Niger crossed over to Europe and established his camp near Byzantium; but he had scarcely arrived at this place, before his troops in Asia were defeated near Cyzicus by the generals of Severus. He was soon however able to collect another army, in which he did not himself take part; but being defeated successively near Nicasa and at Issus, he abandoned his troops, and fled towards the Ephrataes with the intention of seeking refuge among the Parthians. But before he could reach the Ephrataes, he was overtaken by a detachment of the enemy, and put to death.

(Herodian, b. ii.; Spartianus; Life of Pescennius Niger; Aurelius Victor, De Caesaribus, c. 29; Eutropius, viii. 10; Dion, Epitome, b. 73, 74.)

COIN OF NIGER.

NIGHT-JARS, the English name of those Night-Swallow, vernacularly termed Goat-suckers; whence the name caprimulgidae, by which the inhabitants of the Cape Province, known among ornithologists. Mr. Rennie changes the name of the European Night-Jar to Nyctichlodon (Night-Swallow), objecting that the name Goat-sucker, which it has received in all languages, and which, he thinks, has been most abundantly continued from the external quill-like feathers of the term Caprimulus, shows the opinion of it entertained by the vulgar. Now we cannot admit this great absurdity though we entirely agree with Mr. Rennie that 'it is as possible for the Night-Jar to suck the teats of cattle (though most birds are fond of milk), as it is for cats to suck the breath from sleeping infants, of which they are popularly accused.' If every zoological name that has not a sure foundation were to be changed, there would be no small confusion in nomenclature and not a little confusion; and it is, the perpetual change of names is quite sufficiently perplexing. Nor are we at all sure that such names as Caprimulus are not of some value as showing, in connexion with a true history of the habits of the bird, how the errors and superstitions of the vulgar are perpetuated even before the light of modern investigation. Thus much as an apology for not changing the family name Caprimulgidae.

Mr. Vigors remarks that when we search among the Perchers for that point where they approximate the Owls, we at once light upon a group, the Caprimulgus of Linnaeus, whose general appearance and habits point out the affinity. 'The nocturnal and predatory manners of this genus,' says Mr. Vigors, 'the hawking flight, the legs feathered to the talons, the large ears and eyes, the very disk that surrounds the face, and the broad wings, and the long tail, observable in some of the species, the general softness of the plumage, together with its peculiarly striking colour and
while but has and To the beautiful so W belonged, But to whether the resemblance. ful tion §roup, to observers to mulgus, far Society, may to the deed which of these additional to their natal the Birds of Prey. The strong toes of the latter are lost in Caprimulgus: but a construction of similar import (for the serration of the nail appears capable of being applied to the purposes of seizure only), preserves, though faintly, the resemblance which is not almost without. The apparent trivial appendage is an instance of that beautiful shading by which nature softens down the extremes of her neighbouring groups—one of those minute and delicate touches by which she marks at once an affinity and a deviation. But while we may acknowledge the approximation of these two families, we must at the same time acknowledge that they stand in need of an intermediate link to give them a closer connection. The weakness of the bill and of the legs and feet of the Caprimulgus still keeps up more accurate accounts than we at present possess, its members are comparatively strong; while the wide gape of its mouth serves to divide the families still further. A connecting link has been however supplied by an Australian group, the Podargus of Mr. Cuvier, which Mr. Vigors has described. We have an opportunity of observing among the specimens in the collection of the Linnean Society, how far the bill of this extraordinary genus combines the different forms of that of the two genera, and how far it may be possible in the future to assume that the Podargus of Vigors, such as the unequal length of the toes, are related to those of Strix by their superior robustness. Here indeed there is a beautiful gradation of affinities. All the front toes of Caprimulgus are united by a connecting membrane as far as to the first joint; Strix has two; the second to the origin; while those of Podargus partake of the characters of both, in having the middle toe connected with the outer, but divided from the inner. Again, as I have already remarked, Caprimulgus has the nail of the middle toe dilated and serrated; Strix has it undilated and entire at the margin; but in Podargus the same part displays the singular dilatation of the one and the marginal integrity of the other. It is difficult to say to which of these groups it comes nearest, until further and more accurate accounts than we at present possess of their food and economy may determine its actual situation. At present it remains oscilant between the two families, and may decidedly be pronounced the immediate passage from the Birds of Prey to the Perchera. Mr. Vigors adds in a note in his memoir on the subjects to the biologists in New Holland, stating their manners to be generally conformable to those of the Caprimulgii.

Mr. Vigors further observes that the union between the two families of Caprimulgidae and Hirundinidae in the most essential particulars, in the habits, economy, and general conformation, is too evident to the common observer, and too universally acknowledged by scientific writers, to need any further illustration; but it must be remarked that it is gratifying to observe, how, even in minute particulars, a gradual succession of affinities imperceptibly smooths the passage between conterminous groups; nor docs he pass over without remark the circumstance of the hind toe of Caprimulgus, usually retained, being placed all its toes in front, in a similar position to that which they maintain in Cypselus, where the family of the Hirundinidae terminates. He notices also the conformation of the tail in the two families as showing a similar affinity, observing that all the outer feathers of Caprimulgus from Brazil, exhibit the forked tail of Hirundo, one of which, indeed, the C. pardalis of Temminck, has this character developed to an almost disproportionate degree. 'Leaving those typical families,' continues Mr. Vigors, 'we may pass over without remark the circumstance of the hind toe of Caprimulgus, usually retained, being placed all its toes in front, in a similar position to that which they maintain in Cypselus, where the family of the Hirundinidae terminates. He notices also the conformation of the tail in the two families as showing a similar affinity, observing that all the outer feathers of Caprimulgus from Brazil, exhibit the forked tail of Hirundo, one of which, indeed, the C. pardalis of Temminck, has this character developed to an almost disproportionate degree.' 
enemies, and in cloudy days may be seen, in troops of
fifteen or twenty, skimming over the surface of ponds, pre-
ominally in the manner of swallows. Mr. Swainson then
reminds that the Swallows and the Goat-suckers are, in
fact, connected by certain Swifts, for the Balasran Swift
is described as a nocturnal bird, appearing at sunset and
going to rest at sunrise; and thus he enters the family
Hirundinidae. [Swallows.]
The Caprimulgidae, according to Mr. Swainson's clas-
sification, consist of the following genera and subgenera.
But it should be remembered that he states that he has
thought it best not to attempt a natural arrangement, un-
til the family is better understood.

Character of the Family.—Plumage lax, soft. Bill ex-
ceedingly small; gape enormous. Feet very short, weak;
the hallux directed forwards. (Sw.)

Genus Podargus, Cav.
Size large. The middle claw not serrated. The hallux
not directed forward.

Subgenera, Podargus proper. Bill large, very strong;
the tip and margins of the upper mandible folding over those
of the lower. Culmen elevated and arched. True rictal
beadies none. Tongue very thin, entire. Tarsus short.
(Stawson.)

Several species of this subgenus have been found in
New Holland; and we select as an example of these Podargus humeralis.

Description.—Variegated above with ochy brown and
dirty yellow; head and sides of the back conspicuously
striped with black; forehead and dorsal plumage lightly
dotted and banded with white. Tessellated beneath with
black stripes and approximating dirty yellow bands. Length
of the body 20 inches, and of the tail 8½.

Mr. Vigors and Dr. Horsfield observe that the birds of
this genus in the collection of the Linnean Society bear
such a general resemblance to each other, that they felt
some hesitation in describing them as different species.
The careful examination of many individuals in their own
country will, in the opinion of these zoologists, alone deter-
mine with certainty whether they are distinct or merely
varieties of the same species from age or sex. They state
however that Dr. Latham, as well as themselves, distin-
guished this as a species, under the name of the Cold River
Goat-sucker, from the Wedge-tailed Goat-sucker (Podargus
Staniel Cyanus). Mr. Swainson also cites it as a species.

Podargus Javanensis of Horsfield, the Chabba-wonno of
the Javanese.

Description.—General colour ferruginous or rufous, with
a tints of isabella varied by undulated transverse bands of
dark brown. A collar of pale whitish isabella, variegated
with two very narrow bands of deep brown, passes round
the lower part of the neck, and from this collar several
large, irregular, white marks are disposed in an interrupted
series from the axilla to the middle of the back; on the
breast and belly several white feathers are scattered.
The transverse bands are strongest on the rounded tail. Feet
rufous; claws blackish; bill obscure yellow and rather
shining; middle toe not dentated. Length 9 inches.

Habits.—Not known. It is nocturnal and conceals itself
in large forests.

The other two subgenera arranged by Mr. Swainson
under the genus Podargus are Aegotheles, Horsf. and Vi-
gors, and Nyctibius, Vieill.

Mr. Allis has stated that the sclerotic ring of the great
Podargus does not present the slightest appearance of dis-
tinct plates, being simply a bony ring.

M. Lesson is of opinion that Steatornis [Guacharo
Bird] forms the passage between the Caprimulgus and the
Crown.

Caprimulgus. (Linn.)

Bill remarkably small and weak; the sides inflected and
sometimes gaping. Tarsus short. All the toes directed
forwards; the inner and outer toes equal; the middle claw
pectinated. (Sw.)
Mr. Swainson subdivides the genus into the following Subgenera, *Caprimulgus*. Gape strongly bristled. Tail lengthened, rounded. Lateral toes equal. (Sw.)

We select as an example *Caprimulgus Europeanus*. 

Description: Male.—Plumage above and that of the throat ash-grey, thickly streaked and spotted with brown, mostly of a yellowish tinge; head and neck with longitudinal blackish streaks; a white stripe beneath the base of the lower mandible extends along each side of the lower part of the head, and there is a central patch of white upon the throat; quills with the outer webs blushed with reddish-brown, and the three exterior feathers with a large white patch near the tips of the inner webs; tail irregularly marked and indistinctly barred with blackish-grey and yellowish-brown, the two external feathers on each side white at their termination. Plumage of the under parts yellowish-brown, with transverse blackish bars. Bill and irides dark brown; tarai paler.

Female with the plumage of the male generally; but she wants the white spots on the quills and tail-feathers.

This is most probably the *Aegothelas* (Aegothelias, or Goat-sucker) of Aristotle and the Greeks, and the *Caprimulgus* of Pliny and the antient Italians. There is indeed, as we shall presently see, another European species, but it is very rare. The *Caprimulgus Europeanus* is the Colubro Pudagione, Porta quaglie, Boccaccio, and Cocora-terra of the modern Italians; Chocubrasus of the Spaniards; Tettechere, Engulevent ordinaire, and Cray and volant of the French; Milchauer, Greisensucher, Nucht Rabe, Nucht, Schraube, and Tag Schliffer of the Germans; Nataphrata, N. tsakra, and Qualkinerrnen of the ’ Fauna Suecica’; Nat. Rachen, Nut-Skade, and Aften-bakhe of Brunniche; Mucken-stecker and Nacht-krab of Kramer; Alerny y drenel, Rhodol of the modern English; Nacht-krab of the old Goatsucker, Night-Jar, Jor-Oul, Churn-Oul, Fern-Oul, Dor-Hauch, Night-Hauch, and Wheel-Bird of the modern British.

The absurd story of the goat-sucking habits of this bird may be traced back as far as the time of Aristotle, and is probably of much older date. It has all the appearance of a deep-rooted popular prejudice, which was so extensively believed when that gentleman wrote, as to demand, in his opinion, insertion in his *History of Animals.* In the ninth book of that history (c. xxxi.), Aristotle says, "The bird called *Aegothelas* is a mountain-bird, a little larger than the blackbird (corvus) and not much less than the cuckoo. It lays eggs to the number of two or three at most, and is of a sloughy nature (θάλασσις). Flying upon the goats, it sucks them (θηλίσσει τις αιγας προστεθομενοις), whence it has its name. They say that when it has sucked the test it becomes dry, and that the goat becomes blind. It is not sharp-sighted by day: but it sees by night." EAian's version of the effect of the bird's sucking is confined to the part sucked. He says that the operation makes the test dry or blind (τροχος ματαιων), and so the flow of the milk is stopped. He speaks of the great audacity of the bird, observing that it is fearless of the vengeance of the goats (to 33). EAian also refers to its goat-sucking propensity in c. 28 of his *Birds*, Pliny (Nat. Hist. ix. 40) states that the "Caprimulgi are nocturnal thieves; for they cannot see by day (interduo enim visum caret). They enter the folds (casebula), and fly to the udders of the goats in order to suck the milk, which they suck under the skin. The blindness falls upon the goats which have been so sucked. Nor is the charge of goat-sucking the only false accusation made against the Night-Jar. White (Selborne) informs us that country-people have a notion that the barnowl, or churn-owl, sucks the teats of the goat, which is very injurious to weaning calves, by inflicting, as it strikes at them, the fatal distemper known to cow-keepers by the name of pockergudge. Thus," says White, "does this harmless ill-fated bird fall under a double stigma; but which it by no means deserves; in Italy, of sucking the teats of goats, whence it is called the Caprimulgus, and with us, of communicating a deadly disorder to the calf. But the truth of the matter is, the malady is occasioned by a certain small insect, a diurnal insect of the family, which infests the udders along the side of kine, where the maggots, when hatched, eat their way through the hide of the beast into the flesh, and grow to a very large size." (White's Selborne). Below is his folio edition (1555), gives no figure of this species, but the small sketched picture it is found with the name *Tag-Schliijer.* In the small 4to. Portraits d'Oyeuseaux, &c. (1557), a figure is given at the end of the Owls, which, though bad, cannot be mistaken for anything but the *Goat-sucker, with the name of* Goltsucker, or Goat-sucker. For nocturnals, Effraje, Freyze, with the following old quadrat:

Le hiboux têr de la Frejaye effraye,
Cezay qui têt; elle vole de nuit.
Et à l'heure les chevaux de maitre,
Tendre la main en se vit ennuyer !

Food. Habits. Reproduction, &c.—The food of the European Goat-sucker consists chiefly of night-flying and evening-flying moths and beetles, Phalanea, Melodona, &c. In the stomach of one which Wilughby opened were seen as large as beetles. The Eurn chaffinch, *Per strigilis*, seems to be a favourite food, and hence the bird is frequently found in those neighbourhoods where he abounds. It spends the summer in the temperate countries of Europe, but on the approach of winter retired to the south of the Mediterranean seas. It was frequently looked for from the middle of May to the end of that month, and its departure takes place towards the end of September or beginning of October. The earliest appearance of the bird in White's Calendar is dated on the 1st of May, and the latest on the 6th of October. A naturalist paid particular attention to the habits of this species. "There is no bird, I believe," writes that diligent observer, in a letter to Pennant, "whose manners I have studied more than that of the *Caprimulgus* (the goat-sucker), as it is a wonderful and eurous creature, and I have always found that though sometimes it may chasse as it flies, as I know it does, yet in general it utters its jarring note sitting on a bough: and I have for many an hour watched it as it sat with its undisturbed quivering, and particularly this summer. It perches usually on a twig, with its head lower than its tail, in an attitude well expressed by your draughtsman in the folio British Zology. This bird is most punctual in beginning its song early in the close of day; so exactly at that hour that I have struck up more than once or twice just at the report of the Portsmouth evening gun, which we can hear when the weather is still. It appears to me to pass all doubt that its notes are formed by organic impulse, by the powers of the parts of its windpipe, formed into numbers, and it is impossible that it should ring on without producing a sound. You will credit me, I hope, when I assure you that, as my neighbours were assembled in an hermitage on the side of a steep hill, where we drank tea, one of these curious songs came and settled on a little straw edifice and began to chatter, and continued his note for many minutes, and we were all struck with wonder to find that the organ of that little animal when put in motion gave a sensible vibration to the whole building! This bird also sometimes makes a small squeak, repeated four or five times, and we have observed that when he happens the cock has been pur-
lying the hen in a toping way through the boughs of a tree.

Again—On the twelfth of July I had a fair opportunity of contemplating the motions of the Caprimulgus, or Fern-owl, as it was playing round a large oak that swarmed with _scarabae solstitialis_, or fern-cfairs. The powers of its wing were wonderfull, exceeding, if possible, the various evolutions and quick turns of the swallow genus. But the circumstance that pleased me most was, that I saw it distinctly, more than once, put out its short leg, while on the wing, and by a bend of the head deliver somewhat into its mouth. If it takes any part of its prey with its feet, as I have now great reason to suppose, it does these clervers, I no longer wonder at the use of its middle toe, which is curiously furnished with a serrated claw. Mr. Vigors (loc. cit.) remarks that the common Barn Owl (_Stixx fannus_) possesses the same character of serrated _unguis_: and that some other species of the _Strigidae_ exhibit somewhat of the rudiments of it; thus establishing more closely the affinity of the Owls and the _Caprimulgi_. Mr. Vigors adds that his conjecture as to the use of the serrated claw—that is, its being devoted to the purposes of seizure—is considerably corroborated by the passage from White above quoted. At the same time he refers to Wilson, who in his account of the _Caprimulgus Carolinensis_ (_Antrostomus Carolinensis_ of Bonaparte) assigns a different use to this serrated claw. Of this species Wilson says, 'Reposing much during the best of the day, they are much infested with vermin, particularly about the head, and are provided with a comb on the inner edge of the middle claw, where they are often employed in ridding themselves of these pests, at least when in a state of captivity.' Upon this Mr. Vigors observes that such can be at best but an accidental use to which the serration can be applied. There are many other groups of birds, he adds, possessing the same character, to whose same application of it can never be assigned—for instance, the greater part of the genus _Pelecanus_ of Linnaeus. Many of these birds, whose feet, Mr. Vigors observes, are naturally ill adapted by their webbed structure for laying hold of any object, are yet found to imbibe swinging trees, where the serrated claw may give them a fuller power of prehension; they are also, he remarks, assisted to seize their prey occasionally with the foot; in which acts the structure of the nail, as in the case cited by White respecting the _Caprimulgus_, may be peculiarly useful. 'The family of the _Ardeidae_ among the wading birds equally exhibit,' says Mr. Vigors, in conclusion, 'an analogous construction in the middle nail. Here again this character seems adapted to their mode of life in enabling them to hold their prey more firmly in those slimy and muddy situations where it might otherwise elude them; while, at the same time, it may assist their feet (which, like those of the _Pelecanidae_, are naturally ill suited for grasping) in their hold among the trees, where, like some also of the latter family, they build their nests.' Mr. Dillon is of opinion that the chief use of the serrated claw is simply to come out or dress the _ebrisca_ which surround the gape. Mr. Swainson opposes this view, observing that there is an American group of this family which have no bristles round the bill, and yet have the serrated claws; and another group in Australia which have bristles round the bill, and yet with the claw smooth and simple. He also observes that the Heron tribe have the gape smooth, but the claw serrated. Mr. Remmy remarks that the passage in Wilson 'appears to settle the question,' but he gives no satisfactory reason why.

The Goat-sucker is sometimes to be seen abroad in gloomy days; we have seen it on such days, and generally on the ground. On a tree it is observed to perch not across a branch, but on its longitudinal direction. These birds affect the neighbourhood of oaks, where in May they find the _Melolontha vulgaris_, and at Midsummer the _Melolontha solstitialis_. White graphically describes the evolutions of one round his 'great spreading oak,' where it was hawking after a brood of some particular _Philaenus_ belonging to that tree. On this occasion he says it exhibited a command of wing superior to the swallow itself. The same author states that when a person approaches the haunts of this species in the evening they continue flying round the head of the observer; and by striking their wings together above their backs, in the manner that the pigeons called emites are known to do, make a short snap; perhaps at that time, he adds, they are jealous of their young; and their noise and gestures are intended by way of menace. The eggs, two in number, oblong, white or dusky, and streaked somewhat like the plumage of the bird, are equal in size at each end, and are laid on the bare ground, generally among fern, heath, or long grass, sometimes in furze-brakes or woods, but always near the latter. Montagu describes the noise made by the male during incubation when perched, and with his head downwards, as not unlike that of a spinning-wheel, and notices its uttering a sharp squeak as it flies.

The other European species, _Caprimulgius suillus_, which is very rare, has been shot in the oak-woods some miles distant from Algieras, and also in the valley of the Rio del Me, near that city. The Spanish name for it is somala. Mr. Gould has no doubt that its natural habitat is Northern Africa. The Prince of Musignano notes it as occurring in south-western Europe during the summer.

Mr. Gould has established a new genus for some of the American _Caprimulgi_, under the name of _Antrostomus_.

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Phalaenus 

Phalaenus micropterus (old male).

Chordeiles (Sw.). Gape perfectly smooth. Wings very long, equal to the tail, which is slightly forked.

Example, _Chordeiles Americana_. Ground of plumage above, sides of the head and front of the neck, dark liver.
Whether or not these ornamental plumes are lost after the season of incubation is a subject for future inquiry; but they are certainly of very unequal lengths in different individuals. We have seen them in one bird only seven inches long, while in that now before us they measure in extreme length seventeen inches; the webs occupy exactly six, while all the rest of the shaft is naked, the rudimentary hairs on each side merely indicating the position of the laminae, bad they been developed. We cannot subscribe to an opinion we have heard expressed, that these latter have been rubbed or worn off. Another specimen, which we suppose is the female, is perfect in all its plumage, but has no indication, as already observed, of these feathers. In their texture they are remarkably flexible, moving about with the least breath of wind. The inner web is so broad, that the laminae in the middle measure 24 inches; the outer web, on the contrary, is very narrow, and the longest laminae are hardly half an inch."

This is the *Caprimulgus Macrodipteryx* of Aszélius, and the *Caprimulgus longipennis* of Shaw.

**Locality.**—Africa, Sierra Leone.

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**Saccopteryx climatus.** (Caprimulgus climatus, Vieill.)

**Macrodipteryx** (Sw.). Rictus strongly bristled. Wings long, equal to the tail, and with a lengthened reniform feather in each. Tail even.


**Description.**—Wings, for the small size of the bird, very long, rather exceeding, or at least equalling, the tip of the tail, which is quite even and consists of ten feathers. Of the three first quills, which are much the longest, the first is shorter than the third, which is slightly succeeded by the second. The long-shafted feathers are inserted immediately between the primary and secondary quills. The bristles of the mouth are strong and equal to the length of the bill, which is weak. The middle toe is lengthened, and the lateral toes are equal. Colour of the plumage mixed, as in others of the family. Upon each web of each of the primary quills is a row of nine rufous and nine black spots: the rufous bars become very small towards the tips, where the black predominates. The lesser quills are black, with four rufous bands, the tips black. The middle tail-feathers are grey, speckled with black points, and crossed by six black bars, all of which are irregular, excepting the last, which, as on all the other feathers, is regular, well defined, and placed just behind the tips; the outer web of the exterior feather is fulvous white, with about ten black spots, at equal distances from each other. Some of the scapulars have a broad cream-coloured stripe, which forms a connected series when the feathers lay over each other, but those which are conspicuous on the supposed female can scarcely be discerned in the male; this latter however has a few obscure white motiles on the chin, throat, and round the ears. Total length about 8 inches.

Mr. Swainson, from whose ' Birds of Western Africa' the above description is taken, observes that the female is entirely destitute of the long-shafted or supplementary feathers. "Now this," says Mr. Swainson, 'is a very important fact, for it goes far to prove that they are not essential to the economy of the species; for if otherwise, both sexes would possess them, unless it be contended, a supposition highly improbable, that the male feeds in one manner and the female in another. In the absence of all information upon this point, we are led to conclude that they are more ornamental than useful, given to the male sex as attractive decorations to the female, in a similar manner as the flowing feathers of the Paradise Bird are known to distinguish the male sex.

**Prothera** (Sw.). Rictus almost smooth. Wings very long, equal to the tail, which is short and even. Tarsus very naked.

**Example.** *Prothera diurna*. (Caprimulgus diurnus, Wied., Nacunda, Tenn.).

**Description.**—Female.—Plumage above a mixture of grey-brown, yellowish-red, and brownish-black, marked with great spots of blackish-brown, with wide borders of yellowish-red; chin pale yellow, striped with grey-brown; tail marbled with brown and black, bright yellow, with nine or ten transverse bands speckled with brownish-black. Plumage beneath white lined with grey-brown; middle of the belly white, spotless. Length rather more than 10 inches.

**Habits.**—See ante, pp. 224, 225.

**Locality.**—Brazil and Paraguay.
of the earl of Lonsdale, in Fisher Street, Carlisle. M. Nilsson notes its arrival in Sweden by the 1st of Mr. Montagu informs us that it is said to be found only as far north as Yorkshire (its observations being confined to Britain), and certainly not farther west than the eastern borders of Devonshire and Cornwall, which appear equally calculated for their residence both from the mildness of the air and variety of ground beyond the purview of the naturalist's penetration. This, indeed, is the case to all animals, and even plants, is a curious and important fact in the great works of nature. It has been observed that the Nightingale may possibly not be found in any part but where cowslips grow plentifully; certainly with respect to Devonshire and Cornwall this coincidence is just.

Mr. Blyth (Analyt., and Note to an edition of White's Selborne) enters fully into the inquiry as to the distribution of the Nightingale in Britain. Among other highly interesting observations, Mr. Blyth remarks that this bird appears to migrate almost due north and south, departing but a very little indeed either to the right or left. He states that there are none in Brittany nor in the Channel Islands, Jersey, Guernsey, &c. Mr. Blyth is of opinion that the bird is found the farthest westward of them at Cape La Hague, arriving on the coast of Dorsetshire and thence apparently proceeding northward rather than dispersing towards the west; so that they are only known as accidental stragglers beyond, at most, the third degree, whereabouts, plentiful in the southern and western provinces of Devonshire and Cornwall, together with Wales and Ireland. Mr. Gould (Birds of Europe), after referring to Mr. Blyth's papers in the 'Analyt.', states that the Nightingale appears to be confined to particular districts: it is, he thinks, more abundant in the north of France than in its resting-place during our winter months. He has, as far as we know, received specimens killed in the northern districts of France, but have never obtained any from the western border of that peninsula. The list of places where the bird is common in Sweden and other countries situated farther north than England is, that after leaving our island it proceeds to the shores of the Continent, and gradually makes its way southwards, until it arrives in Africa, which is its chief resting-place during our winter months. We have seen specimens killed in the northern districts of Africa, but have never obtained any from the western border of that continent, as it is known to inhabit the spot which is the most regular in the approach of winter. The islands of the Great Archipelago are among the favourite localities visited by this delightful bird. Mr. Yarrell (History of British Bird's, now in the course of publication) says, 'If we consider that this bird extends its visits to Africa as far north as Russia and Sweden, in its limited range in this country is unaccountable. It is found in Sussex, Hampshire, Dorsetshire, and the eastern parts only of Devonshire, along the line of our south coast, and has been heard about Tewit, and Exmouth, but farther west in that direction. In North Devon it has been heard near Barnstaple, but not in Cornwall or Wales. A gentleman of Gower, which is the peninsula beyond Swansea, has a great number of specimens from Norfolk and Suffolk, not far back, some scores of young Nightingales; he hopes that his acquaintance with his beautiful woods and their mild climate would induce him to visit the south coast; but this is a poetical licence, as the bird is not there.'

'It is singular, that concerning all the more modern authors do, that the Nightingale is not now to be found in Wales, a Welsh name for the bird should exist; yet Pennant gives this name in his list, and it will be found at the head of this article. Pennant, be it remembered, only exists from North Wales.

In Ireland the Nightingale seems never to have been heard.
Mr. Yarrell, who remarks that it is not included by Mr. Randles in his 'Catalogue of the Birds of Lancashire,' though it has been heard as high up as Carlisle, but no farther, is not one of the birds frequenting Essex, Suffolk, Norfolk, some of the more wooded parts of Lincolnshire, and several parts of Yorkshire; but not higher than five miles north of the city of York, as he learned from his friend and correspondent Mr. Thomas Allis. Mr. Yarrell states his belief that it has not been heard in Scotland or in the Scottish islands, which, he adds, considering that it visits Denmark, is extraordinary. He then quotes from a note to an edition of White's 'Selborne,' published in Edinburgh, the following record of an attempt to establish the Nightingale in Scotland:—"It has been generally believed that the migratory songbirds, both old and young, return to their native haunts in the breeding season. . . . Impressed with this belief, Sir John Sinclair, Bar. loosing known for his patriotism, commissioned the late Mr. Dickson, of Covent Garden, to purchase for him as many Nightingales' eggs as he could procure at a shilling each. This was accordingly done, the eggs carefully packed in wool, and transmitted to Sir John by the mail. Sir John employed several men to find and take care of the nests of several Robins, in places where the eggs might be deposited and hatched in security. The Robins' eggs were removed, and replaced by those of the Nightingale, which were all set upon, hatched in due time, and the young birds brought up by the eastern side of one island that flew when fully fledged, and were observed for some time afterwards near the places where they were inbred. In September, the usual migratory period, they disappeared, and never returned to the place of their birth."

Description.—Rich brown above; rump and tail with a reddish tinge; throat and middle part of belly dirty or greyish white; lateral parts of the neck, breast, and flanks grey; bill and legs light brown. Sexes alike.

Habit: Food: Reproduction.—The Nightingale shuns observation, abiding in the thickest covert, and in these the nest is sometimes placed on a low fork, but generally on the ground. Withered leaves, particularly those of the oak, very loosely conjoined with dried bents and rushes, and lined internally with fine root-fibres, form the structure. The eggs, of an olive-brown, are four or five in number. After the young are hatched, generally in June, the melodious song of the male ceases, and is succeeded by a low croak, varied occasionally with a snapping noise; the first is considered to be meant for a warning, and the last as a defiance. The food consists of insects, such as flies and spiders, moths and earwigs. Green caterpillars were the food brought by the parent birds to the nest of young Nightingales taken by Colonel Montagu. It is not improbable that the bird's choice of localities is in some measure determined by the absence or presence of some favourite insect food.

Laetus Philomela (duparturi). The Nightingale.

There is another European Nightingale (The Thrush Nightingale, Philomela Turdoides of Blyth. Luscinia major of Brisson, Sylvia Philomela of Bechstein), inhabiting central Europe. The song of this species is loud, but far inferior to that of the true Nightingale. It is said to be common in Egypt.

Mr. Swannson makes the Philomelinae the second subfamily of his Sylviidae. [SYLVIIDAE.]

NIGRIN, oxide of titanium, containing about fourteen per cent. of iron. It presents menacrite in colour, lustre, and appearance of the fractured surfaces. It occurs in Ceylon and in Transylvania.

NIKA, a name given by M. Risso to a genus of Macrurus Crustacea, placed by M. Milne Edwards between the genera Corallium and Almadrina in the tribe of Albatena to which the latter zoologist also refers the genus Automea. [SALICOOQES.]

NIKON, a celebrated personage in the annals of Russia, and the sixth patriarch in the Russian church, was born in May, 1605, in a village near Nischnei-Novgorod, where his father was a husbandman. A natural inclination for study led him to become the pupil of a monk in the convent of St. Makarius. The taste which he there acquired for meditative life and discipline prevailed, that although he married, in compliance with the pressing instances of his family, he separated from his wife after ten years' union, and prevailed upon her to enter the convent of St. Alexis at Moscow, while he himself retired to a small island in the White Sea, not far from Solovetz, where there was an islanded monastery of hermits in detached cells. The desolation of the place and the severity of the discipline served rather to increase than to abate the ardour of the new recluse; but the zeal of the brethren led to discussions that terminated in his repudiation, or at least in flight. Being detained by hunger in his wooden church by a sionine edifice, Nikon, and Elizar, the founder and head of the community, proceeded to Moscow, where they collected contributions for the purpose; took their return by land, and the more intensive keeping, and manifested no intention of applying it to the intended purpose. This led to remonstrances and altercations; and to such persecution on the part of Elizar, that Nikon pushed off from the island in a small boat; and after incurring great danger, was driven to the island Kj, at the mouth of the Onega, where he set up a wooden cross. At the same time he made a vow to erect a monastery on that spot, in fulfillment of which may now be seen the magnificent cloister of the Holy Cross. Associating himself with a community called the Koscheherher, he so distinguished himself by his superior sanctity and severity of life, that on the death of their abbot, or principal, he was elected in his place, in 1645. Being compelled nine years afterwards to leave Moscow, to arrange some affairs of his community, he then became known to the Czar Alexis Mikhailovich, who was so struck with his eloquence and understanding, that he caused him to be appointed archimandrit of the Novgorod Convent. A new career was thus suddenly opened to him: his influence with the sovereign increased daily, and he employed it in behalf of the distressed. On being appointed metropolitan of Novgorod, in 1648, he attached the people of that city to him no less strongly: his eloquence drew crowds to hear his discourses in the cathedral, and his bounty maintained numbers during a severe famine. Besides this he appeased a violent popular insurrection at Novgorod in 1650, at very imminent peril to his own person. In the mean while he continued in high favour with the Czar, who frequently corresponded with him, and who, on the death of the patriarch Joseph, in 1652, appointed him his successor. It was about this time that he commenced his reforms in the books, as he had previously done in the liturgy of the church; and held several councils relative to the translations of the Scriptures. But herein his zeal led to his disgrace: his reforms were regarded as dangerous innovations; and notwithstanding the Czar had shown such friendly confidence in him as to place his own family under his care during the pontificate of Nikon in 1654, and had consecrated him at the consecration of the Voskresensky monastery (erected by Nikon) in 1657, the patriarch's enemies contrived to prejudice him in the good opinion of his sovereign, and in 1658 he retired to the monastery just mentioned, situated about forty miles from the capital, where he resided in retirement. How this unfortunate quarrel and misunderstanding originated is not precisely known; and it will be sufficient here to remark that it increased, till at length, in 1667, a
council was held at Moscow, at which the Czar himself presided, and which was attended by the patriarchs of Alexandria and Antioch, those of Constantinople and Jerusalem having excused themselves. The result was that Nikon was deposed from his dignity, and was banished to the Nilo-Desert, with the rank of a superior monk. There he remained until after the death of Alexis, whose successor, Pheodor Alexievitch, granted him permission to return to the Vskresensky monastery; but he died on his journey thither, at Yaroslav, August 17th, 1671, in the seventy-fifth year of his age.

NILE (Nils, in Latin), the name of the great river of Eastern Africa, the various branches of which have their rise in the high lands north of the equator, and, flowing through Abyssinia and other regions to the westward of it, meet in the country of Sennaar. The united stream flows northwards through Nubia and Egypt, and after a course of more than eighteen hundred miles from the farthest explored point of its principal branch, enters the Mediterranean Sea, which, after several mouths, form the head of the Gulf of Elbe, of Egypt. The word Nil seems to be an old indigenous appellation, meaning river, like that of Gir in Soudan and other countries south of the Atlas. The modern Egyptians call their Nile, or simply Bahr el Nil, Nubia it is called by various nations; in Sennaar the central branch, or Blue River, is called Adit; and in Abyssinia, Abawi. The three principal branches of the Nile are—1, the Bahr el Abiad, or White River, to the west, which is now ascertained to be the largest branch of the Nile from its rise in the mountains, that a number of lakes at the foot of the Mountains of the Moon, which he placed in 10° S. lat. Strabo (p. 821) speaks of the island of Meroe as bounded on the south by the confluence of the Astasobas, Astaburas, and Astasobas. In another place (p. 786) he says that the Nile wore a winding course through the Astaburas and the Astasobas; which latter some call the Astasobas, and say that the Astapus is another river which flows from some lakes in the south, and makes pretty free to the direct course of the Nile, and is swollen by the summer rains.' While these passages certainly prove that the antient geographers knew that there were three main streams, they also prove that their notions about them were confused. The numerous reports of the name Astapus this ridge or great mountain of the Arabic version of the same name, Jibalu 'lam Kari, though generally pronounced Jibali 'um Kumri, which would mean 'blue mountains,' seem to agree in placing the sources of the Abiad several degrees north of the equator, at nearly an equal distance between the eastern and western coasts of Africa. But we have no positive information either as to the true position of the sources or of the mountains. According to the report of Antonio Fernandez given by Tellez, the high land of Abyssinia or Egypt to the south into the kingdom of Naram, the northern part of which is at 10° N. lat., and it probably extends thence to the westward through central Africa. The Bahr el Abiad was traced upwards by Linant, in 1827, as far as Aliax, a direct distance of 15° of land, miles south of Abiad, which is in 15° 34' N. lat. and about 32° 30' E. long., and at the confluence of the Blue and White Rivers. Since that time a party of Turre-Egyptians, headed by Ibrahim Kashef, an officer of the viceroy of Egypt, marched upwards from Khartum for thirty-five days along the banks of the Blue River. On the twelfth day they reached the first island of the Shillukus, and after traversing the territory of that people they entered on the twenty-ninth the country of the Denka, prince of the Abiad, through which they continued to ascend along the banks for six days more, when they began to retrace their steps. At this point the river was shallow, full of islands, and six hours in breadth; and there were no mountains in sight. The latter part of the march appears from the description of Ibrahim to have been in a direction nearly west, and as the first island of the Shillukus, which they reached on the twelfth day, is not far from Alem, according to Linant's statement, the extreme point attained by Ibrahim was probably about 10° N. lat. and 29° E. long. The result of this expedition agrees with Browne's report from hearing, in giving an easterly course to that part of the river which is south of Dar-Fur, and passing south-westward of that kingdom (Col. Leake's paper 'On the Quorras,' in the 2nd v.l. of the Journal of the Royal Geographical Society of London, and Linant's Journal of a Voyage up the Bahir el Abiad, with some general notes on that river and illustrative maps, a small scale). The course of the river from the Abiad to the Turkish party, although it may be exaggerated, leaves little doubt that the river at the extreme point of their journey was much broader than at its junction with the Blue River, and that it has a peculiar character, its origin being perhaps as follows: which may be supplied by streams flowing from a distant range of mountains. The existence of lakes which have communication with the river only in time of high water is stated highly probable by a passage in Linant, as the nil,' which states that at the time of the inundation of the White Nile a prodigious quantity of fish is brought down towards Khartum by the current.

Mr. Holroyd, in his Notes on a Journey to Kordconstant, &c. (p. 112), says that Khurshid Pasha told him that he had been twenty-one days above Alem, on the Bahir Abiad, in the boats of the country with soldiers, and had reached an island which the river divided a considerable distance above Khartum, but was unable to say which was the direction of the White Nile properly so called. In the country of the Shillucks it seems that several rivers join the Bahir Abiad from the west, the names of which are Alem, Sennaar, and the Gudia. One of these may be the Bahir el Adda mentioned by Browne as the last western tributary of the Bahir. The Bahir Abiad, which at its confluence with the Blue River is only about 1000 feet wide, is described by Linant as entering the sea in a wide sandy beach without any appearance of verdure. But even this is not the full tide of the great river, for the river then overflows the adjoining country, and the waters extend in some places above twenty miles from side to side. The shores of the river are very flat, especially on the western side, and the water is only at the middle of the stream, where Linant found it to be from two to three fathoms. The rise of the Bahir Abiad is not perceptible till some time after that of the Bahir Azrek, according to Linant; but an American who accompanied Ismail Pasha to Semna in 1821 stated that the Onil, or mountain, rises about twenty days sooner than the Adit (the name of the Blue River in Sennaar), and that the difference of colour of their waters proves that they flow through very different soils. The white colour of the Abiad is occasioned by a very fine white clay with which its waters and imported clays are mingled. The Adit is almost black during the season of its increase. At the confluence of the two streams, says Linant, is very great, the waters of the Abiad being always white, and as it was very early in the dry season, the Abiat is of a greenish-blue colour, and the Adit is of the same colour during the inundations, when the Bahir Azrek becomes reddish owing to the alluvium brought down by its affluent the Bahir Toumet, which comes from the Nile through the Akar river. The Bahir el Abiad flows into the province of Fazulo, above Sennaar.

The Bahir el Azrek, or Blue River, which was long supposed to be the main branch of the Nile, has three sources in the high land of Gojam, near the village of Gezor, where it receives the lake Dembea, by a course of 36° 55' 30° E. long., according to Bruce's observations. The Agows, who inhabit that district, worship the river. [Antu- sandia: Bruce.] The sources of the Azrek appear to have been first visited by Father Faced, and perhaps by other missionaries, long before Bruce. The discovery that discovery has become much diminished since the information which we have acquired of the Abiad, whose sources are still unexplored, and still involved in that mystery which the antients represent as hovering about the mountains of the Nile. After rising north and north-west of about seventy miles, the Azrek, or Abawi, as the Aby-
NIL

synians call it, enters the lake Dembea or Trano on its
south-western side. This fine lake is sixty-five miles in
length from south-east to north-west, according to Bruce's
map, and about thirty in its greatest breadth. Its surface
is more than twice that of the lake of Genesis. It occupies
the centre of an elevated table-land, surrounded by hills
and mountain ranges, from which numerous streams fall into
the lake. The Blue River, issuing from the lake at its south-east
extremity, and that of the Nubia, and those of Ifelle and
Kalebsheb, all flow over it. They enter it from the south-east
side at Alata; after which it flows nearly due south, and
then turns to the south-west, encompassing the provinces
of Quads, Damot, and leaving Amhara Proper on its right
or eastern bank. After receiving several affluent from the
highlands of Abyssinia, which run down the west, forming
a curve which twice intersects the tenth degree of
north latitude, being nearly the same parallel as that of the
farthest explored point of the Abiad, which is six degrees
down to the south. This tract between the two rivers is
yet unexplored; it is nominally dependant on Sennaar,
and is inhabited by the Denka, the Shillulks, the Bobki, and
other Negro tribes, who are pagans.

On the 1st of January, 1823, Ismael Pasha, son of the
viceroy of Egypt, with 1200 men, started from Fazocolo,
which is about 11° 20' N. lat., on the left bank of the Blue
River, and marched southwards into the interior in search of
the gold-mines of Quadsamay. After crossing the Bahar Tounet, an affluent of the Azrek, in about 10° 30'
N. lat., on the right bank of the same river, and fought some
40 miles south of the lake, the Pasha, arriving at Singa,
Ismael believed that after the rainy season there were sometimes
found bits of gold of the size of beans. After seventeen
days passed among golden sands, Ismael became convinced of
their barrenness; and on the 5th of February gave orders to
proceed farther south, and on the 9th arrived at Singa, in
10° 30' N. lat. but the negro inhabitants of the neigh-
bouring mountains became so troublesome and daring, that
Ismael was obliged on the 11th of February to order a
retreat.
(Cailiaud, Voyage à Meroe, ou delà du Quadzoy, &c., 1826-7.)

Continuing its course in a north-north-west direction,
towards the low country of Sennaar, the Azrek, or Adit, as
it is here called, after crossing the province of Fazocolo, a
dependency of Sennaar, passes by the town of Sennaar,
which is on its left bank, in about 13° 30' N. lat. and
33° 45' E. long. Continuing to flow nearly in the same direction, it
receives on its right bank the Danadar, Rahat, and other
streams on the right bank of the river's edge. These streams
rise in the highlands which enclose the basin of lake Dembea.
The country on its left bank, and between it and the Abiad,
constitutes the kingdom of Sennaar proper, which is also called
Atjesur, or the island [Sennaar], and is divided by the Azrek,
Malak, or chief river of the country of Abaras, or island of Meroe.
[NUBIA.] At Khartum the White and Blue rivers unite, the former being the
wider; and the two streams flow for several miles in a
common bed without mixing their waters, like the Rhône
and the Arve below their junction near Geneva. After
passing Halfay the united stream of the Nile bends towards
the north-east, passes by Shendi and the runs of Meroe,
and on entering the country of Berber it receives on its
eastern bank the Bahar or Tounet, the third great con-
fluence of the Nile.

The following is a description of the appearance of
the Nile in its course through Upper Nubia. 'The Nile
down the point of junction of the Abiad and Azrek,
and then southward along the left bank of the Azrek.
Betweeen Halfay and Shendi the river is straightened, and traverses a
deep and gloomy defile formed by high rocky hills, be-
tween which the Nile runs deep, dark, and rapidly for
about twenty miles, in Lower Nubia, then spreading
rapidly, the river again spreads itself majestically and flows between
immense plains of herbage bounded only by the horizon.
About thirty miles above Naurreddin, the head village of
Berber, we passed the mouth of the Bahar el Issaoul (the
True Branch) of the Nile, which from the third cataract empees itself into the Nile. I estimated it at about two-thirds of a mile at its embouchure. The Nile below the point of junction of this river is more than two miles broad
from bank to bank. (Narrative of an Expedition to Don-
gola and Sennaar under Imaiyal Pasha, by an American,
London, 1822.)

The Tacazze, perhaps the Astaboras of the ancients, rises
in the high mountains of Lasta, in about 11° 40' N. lat. and
39° 40' E. long. It is one of the most important missions-
aries in Abyssinia, and have been visited of late years
by Pearce. It flows for a considerable distance in a northern di-
rection between the range of the Sameen mountains on the
right, and the Efat hills on the left. It receives on its right bank the Aregaa from Antak. On arriving at 13° 15' N. lat. the Tacazze turns to the north-west, forming the boundary between the kingdom of Amhara, on its left, and Tigre on its right bank. The river has numerous rapids at this point, and is foamed by salt. Guest saw in it enormous crocodiles of a greenish
colour and large hippopotami. Proceeding north-west the
Tacazze flows through the lowlands of Waldhubs and
Walky, which are dependencies of Tigre; and at 14° 50' N. lat.
and 36° 40' E. long., in a wide bend, it receives on its right
bank the Angrak, which rises on the north slope of the
high land of Dembea. It afterwards receives several other
streams which come from the same direction and pass
through the country of Ras el Peul, which was visited by
Poncet and Bruce. It then inclines more to the north;
and between the parallels of 16° and 17° N. lat., in the country
of the Taka, it is supposed to receive on its eastern bank the
Marghab, a considerable stream which comes from Tigre,
where it has been described to have coursed for a
long distance within a short distance from the Tacazze. [Baia, or Boja.]
The Tacazze then passes Gous Radjib, visited by Burkhart
on his journey to Susakim in 1814, and inclines again to
the west, and at 17° 15' and about 34° 5' E. long. A short distance before its confluence the Tacazze
receives on its right bank the Mogren from the north-east,
which rises in the highlands of the country of the Bishareens.
At the season of the inundation the Bahr Mogren brings down from the interior a quantity of
black earth, which is said to affect the colour of the
Nile. (Linn's Notes on the Bahr of Adwa.)

The Nile, from the confluence of the Tacazze down to its
entrance into the Mediterranean, a distance of 1200
geographical miles measured along the course of the river,
receives no permanent streams; but in the season of rains it
receives wadys, or torrents from the mountains, which
lie between it and the Red Sea. After flowing through
Berber in a north-north-western direction, a populous and
deforested country, and full of villages, the Nile enters a barren
and dreary country, where the desert sands come close to
the river's edge. The banks and shores are generally of
black granite. No verdure is to be seen, except
on the margin of the river. On arriving at about 19° N.
lat. the Nile turns nearly west, and forms the large
island of Mograt. This district is called El Rabat Tab, and
is said to be divided between the Nile and the
fertile islands formed by the Nile, beside the adjacent
banks. The Nile below Mograt turns abruptly to the south-
west. This is known as the great bend of the Nile.
Continuing in the same direction, it passes through the country
of the Sheygga Arabs. [BAKEL.] At the village
of Korti, 18° N. lat. and 31° 50' E. long., the river turns
to the west; and after a course of about thirty miles in that
direction, it resumes a northern course, flowing through the
country of Dongola. The breadth of the cultivable land,
on each bank through the Dongola country, which is above
100 miles in length, varies from one to three miles, beyond
which is the desert. The left or western bank is the
more fertile, the eastern bank being in many places sand
and barren. Some of the islands, such as that of Argo,
are very fertile. (Waddington and Hanbury's Travels;
Rüppel's Travels in Nubia and Kordofan.) North of
Argo, in 19° 40' N. lat., the Nile enters the province of Dar
Bishareen, and on arriving at the town of Ismael, on the
left bank, the Nile enters the valley of

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the Nile is very narrow, the rocks of the eastern and western mountains often coming close to the river, and leaving it for a time to the rocks of alluvium; in other places, on the Libyan side, the sand covers the whole level space between the hills and the bank; and the character of the country between Wady Halfa and Assouan is totally different from that of Egypt. The river about Kasrbohn rises between 30 and 40 feet perpendicularly during the inundation; and after it has subsided, in February, the stream runs at a rate of two or three nautical miles an hour.' (Sir J. Gardner Wilkinson, On the Nile and Former Lords of Egypt, in London Geog. Journal, vol. 9.)

After the inundation, the Nile flows through the whole length of that country, which it waters and fertilises. Egypt owes to the Nile its very existence as a productive and habitable region, and accordingly, in olden times, the level of the Nile was of great importance to the Viaducts. A full account of the Nile in its progress through Egypt, of its periodic rise, and its delta and various mouths, is given under Egypt.

The rich alluvial deposit which the Nile spreads over the lands of Nubia and Egypt continues to increase. All therefore about the stoppage of the overflowing of the Nile are unfounded. In the valley of the Nile the banks are much more elevated than the land at a distance from the river, and they are quite covered with water, even during the highest floods. The difference does not exist between the height of the banks and the land near the edge of the desert is often as much as 12 and 15 feet. The dykes which form a communication between the villages during the inundation continue open with a level of the banks of the river, and as they extend into the interior rise to so great a height above the fields as to leave room for the construction of arches for the passage of the water. This appearance of an elevated strip of land along the banks of a river, sloping towards the interior, is common to other river valleys which are subject to periodic inundations.

NILEUS, a surgeon of the Alexandrian school, celebrated for the invention of a machine called the 'plinthum,' which was employed with success in reducing luxations of the femur. (Cels. De Med. lib. vi. cap. 8; Orisba, De Med. chir. cap. 8, p. 617.) Some of his medicines are quoted by Galen. Aetius, Celsus, Paulus Areignet, Celsus Aurelius, and Orisbaus. The exact time when he lived is not known; but as he is mentioned by Celsus, we may perhaps safely place him a little before the beginning of the Christian era.

N I G H T H E R R Y MOUNTAINS. [HINDUSTAN, vol. xii., p. 207.]

N I M E S or N I M S E S, a town in the south of France, capital of the department of Gard, in 43° 59' N. lat. and 4° 59' E. long. It is 720 miles south of Paris in a direct line south by west, 750 miles by the direct road through Auxerre, Vienna, Valence, and Pont St. Esprit, or 417 miles by the road through Nevers, Moulins, Clermont, and Mende. Nimes, antiquely Nemausus (Nemaussac), is a town of great antiquity. Strabo (p. 156. Casaub.) notices it as the capital of the Celtic nation, the Volsci Arecomici, or Areocumaci (Oleus Arecomacum), and states that though inferior to Narbonne in the number of strangers and others resorting to it, it was superior in the number of Roman citizens; the town exercised authority over twenty-four populous villages, and enjoyed the 'Jus Laui,' by virtue of which those elected to the magistracy or priesthood in Nemaussac acquired the rights of Roman citizens. Nemaussac was situated on the high road from Italy into Spain, which, though in excellent condition in summer, was in spring and winter impeded by mud or by floods caused by the mountain torrents. It was fortified with walls and gates by the emperor Augustus, about four hundred years superior in the number of Roman citizens; the town exercised authority over twenty-four populous villages, and enjoyed the 'Jus Laui,' by virtue of which those elected to the magistracy or priesthood in Nemaussac acquired the rights of Roman citizens. Nemaussac was situated on the high road from Italy into Spain, which, though in excellent condition in summer, was in spring and winter impeded by mud or by floods caused by the mountain torrents. It was fortified with walls and gates by the emperor Augustus, about four hundred years.
better preservation than the Coliseum at Rome, and of greater extent than the amphitheatre of Verona. It is a perfect oval. The greater diameter, including the thickness of the wall, is estimated at 405 French, or 434 English feet; the smaller diameter, 317 French, or 346 English feet. The exterior wall, which is nearly perfect, consists of a ground story and an upper story, each pierced with sixty arches, and is surrounded by an attic. Its height from the level of the ground is above 70 English feet. The lower or ground story is adorned with pilasters, and the upper with Tuscan or Doric columns. The attic sugars the holes destined to receive the posts on which was stretched the awning that covered the amphitheatre. The rows of seats are computed to have been originally thirty-two in number. There were four principal entrances. The amphitheatre has been computed to hold 17,000 persons: it was built with great solidity without cement: the stones were quarried in the neighbourhood, and some of them are of immense size. When the Visigoths possessed Nîmes, they converted this building into a fortress, to defend the place against Clovis and his Franks. They built the square towers which yet remain near the eastern door. It was defended by the Saracens against Charles Martel, who assailed it with fire, of which it still exhibits the traces. Under the viscounts of Nîmes it was still kept as a fortress. The arena was encumbered all of late years with a parcel of wretched hovels, now removed.

There is an ancient edifice which antiquaries have designated the temple of Diana; it is of moderate dimensions, and is built of large stones without cement; but the violence which has been offered to it at different times has reduced it to a mere ruin. The interior still exhibits some remains of a fine vaulted roof and of the niches and columns which once adorned it. A number of inscriptions, capitals, and other fragments of columns, or, of different parts of the building, statues, and other antiquities, are confusedly heaped together in this building. The adjacent baths of Diana, and the fountain which supplied them, have disappeared or lost their antique character under the more modern works which have been added to them. The waters of the fountain are conveyed by a canal round one of the public gardens of the modern town, and the place of the baths is occupied by statues and groups in marble, of modern date and inferior execution.

Near the temple of Diana is a singular edifice called La Tour-magane, Turris Magna, 'the great tower.' It consists of a lower story of heptagonal form, 245 French, or 262 English feet in circumference; and of an upper story, an octagon, of 107 French, or 115 English feet in circumference. It is 117 French, or 125 English feet high; but the ruins which surround it much diminish its apparent height. It is built of small square stones, and each front was originally adorned by two pilasters of freestone, Tuscan or Doric. It stands on an elevation, and joined the ancient walls of the town; but its origin and use are both entirely unknown.

There are two Roman gates; one is called the gate of Cesar, and was discovered A.D. 1791, on the demolition of some ancient ramparts erected in the twelfth century. This gate is built of large blocks of freestone, and has two large arches in the middle, and two smaller arches, one on each side. It bears an inscription, showing that the gates and walls were the gift of Augustus to Cesar to the colony. The inscription is IMP. CAESAR DIVI. F. AVGSTVS.

COS XII. TRIVB. POTEST. VIII.; and in smaller letters, PORTAS. MYROS. COL. DAV; from which we learn that at this date Nîmes was a Colonia: indeed, Augustus is considered as the founder of the colony. The other Roman gate is far inferior.

Besides these more important remains Nîmes has a vast number of inscriptions, monumental and other, and one or two fine mosaic pavements: in the neighbourhood there is a Roman bridge.

Nîmes is situated in a delightful plain at the foot of hills covered with vineyards and olive-gardens. The city, properly so called, has narrow, crooked, and ill-built streets; it is surrounded by boulevards, which occupy the site of the ancient ramparts, and separate the city from its suburbs, which at least equal it in extent, and have straight, wide, and long streets, but the houses are ill built. The boulevards are receiving continual accessions of embellishment from the erection of new and handsome buildings. Of the public edifices the most remarkable are Le Palais de Justice (the court-house), the hospital, the theatre, the cathedral, the college church, and le Dépôt de Mendicité, or poor-house. Le Palais de Justice fronts the boulevard of the esplanade, and is a handsome specimen of Grecian Doric. The hospital fronts another of the boulevards, and is remarkable for the tedious uniformity of its extended front; the theatre is on the same boulevard as the hospital. The cathedral is a Gothic building, and contains some interesting monuments, among them that of Fletcher. Some of

A brief view of the Corinthian Temple at Nîmes, called the Maison Carrée, with the remains of the Colosseum which once surrounded it.—From the beautiful model by M. Poiteau of Nîmes, made during the recent excavations from a ancient ramparts, but it now bears the name. (Drawn by W. B. Clarke, Nov. 1836.)
and sewing and embroidering silk, is also manufactured. There are several dye-houses and tan-yards, and the town is the great market for the raw silks of the surrounding district. Brandy is distilled and vinegar manufactured. The surrounding hills produce the vine, the fig, the olive, the pomegranate, the almond, and a great number of aromatic herbs; the plains yield pasturage, corn, and vegetables. The town carries on considerable trade in these various productions; in wine, spices, drugs, essences, silks raw and wrought; also in the osmagnous seeds, medicinal plants, and those used in dyëing. The merchants have connections with most of the great towns of Europe, but especially with Amsterdam, Hamburg, Lübeck, and other places in the north. There are two fairs in the year, but they are of short duration and little importance.

Nîmes is the seat of a bishopric: the diocese comprehends the department; and the bishop is a suffragan of the archbishop of Avignon. It has a Cour Royale, the jurisdiction of which extends over the departments of Gard, Ardèche, Lozère, and Vaucluse; and there are subordinate judicial courts and several fiscal or administrative government offices. It has an Académie Universitaire, a Collège Royale or high school, an Académie Royale for the department, a cabinet of natural history, a course of instruction on chemistry as an art, the public library, 10,000 (or, according to M. Millin, 30,000) volumes, an agricultural society, a society of medicine, a commission of antiquities, and a Bible society. Elementary instruction is considerably diffused. There are several schools, of which the principal is that belonging to the high school, which contains more than 8000 students.

Nîmes has been the birth-place of several men of eminence; among them are the Greek scholar Coteleri (Cotelerius) the learned Petit and Germaine Saumon, an eminent preacher among the Huguenots; and Rabaut de St. Etienne, one of the victims of the Revolution.

The arrondissement of Nîmes comprehends an area of 650 square miles, and contains 72 communes. It is divided into eleven cantons or districts, each under a justice of the peace. The population in 1831 was 128,461; in 1856, 131,712.

NIMWEGEN, or NYMEGEN, is a strongly fortified town in the province of Gelderland in the kingdom of the Netherlands, in 51° 51' N. lat. and 5° 22' E. long. It is on the left bank of the Waal, and is built partly on some hills, and partly on the level ground between the hills and the river, over which there is a flying bridge. It is not ill situated; the streets being narrow, and the houses rising above and overlooking each other, owing to the steep ascent of the hills, the town has an irregular appearance. The inhabitants amount to 17,300. Their chief occupations are tanning, bleaching, glazemaking, and arsenic- manufcatur. A peculiar kind of pale beer called Moll, large quantities of which are exported. They manufacture common brass snuff-boxes, and have a good commission trade. They show an old edifice, now forming part of the fortifications, which is supposed to be of Roman origin; and in the town-hall (which is a handsome building) there is a large collection of Roman antiquities. Nimwegen is supposed to be on the site of the Roman Noviomagus. Of the nine Calvinist, Lutheran, and Roman Catholic churches, some are worthy of notice. On an eminence near the river stand the ruins of an antient castle called the Falkenhof, which is said to have been built by Charlemagne, and was the residence of the kings of the Franks. Two public promenades, the Katerboch and the Belvedere, are much frequented on account of the extensive views which they command of the course of the river and of the surrounding country.

Nimwegen, having joined in 1579 the union of the northern provinces, was besieged and taken by the Spaniards in 1655, but recovered in 1590 by prince Maurice of Nassau. In 1792 the French obtained possession of the town with little resistance; and in 1678 the treaty of peace was concluded here between France, Spain, and the United Provinces, by which it was restored to the Dutch. In 1793 the French made an unsuccessful attempt to surprise it. During the war of the Revolution it was taken by the French, on the 8th of September, 1794, after a severe action, in which the allies were defeated.

NINEVEH (NINEVEH). LXX. 'Noroה, Ninoe'), called by the Greeks and Romans Ninus (Ninos), the capital of the Assyrian empire, was situate in the plain of Aturia, on the Tigris (Strabo, xvi. 737; Herod., i. 193; i. 156; Ptolem. vi. 1) and not on the Euphrates, as Diodorus states on the authority of Ctesias (ii. 3, 7).

The Herodotean and Greek writers concur in describing Nineveh as a very large and populous city. Jonah speaks of it as "an exceeding great city of three days' journey" (Jon., xii. 3), and states that there were more than 120,000 persons in it. It was, however, said to contain 100,000 or 150,000 persons, and the number of its houses was 30,000; and it was described by Diodorus as 100 feet high, and so broad that three chariots might be driven on them abreast. Upon the wall stood 1500 towers, each 200 feet in height, and the whole was so strong as to be deemed impregnable. (Diod., ii. 3; Noaham, chap. x.)

According to the Greek writers, Ninus was founded by a king of the same name; but in the book of Genesis it is stated to have been built by the Assyrians, which is to be the meaning of the passage in Gen., x. 11. It was the residence of several Assyrian kings (Strabo, xvi. 37; compare Strabo, ii. p. 84; xvi. p. 737), and is mentioned as a place of great commercial importance; whence Nahum speaks of its merchants as more than the stars of heaven (iii. 16). But as in the case of most large and wealthy cities, the greatest corruption and luxury prevailed, on account of which Nahum and Zephaniah (xxx. 13) foretold its destruction.

On the dissolution of the great Assyrian monarchy, in the eighth century a.c., Nineveh fell to the Medes under Cyaxares, in consequence of the river demolishing part of the wall; when it is said to have been destroyed. (Diod., ii. 28.) Asyri."

But it appears to have still existed as the capital of an Assyrian kingdom till a.c. 625, when it was captured by the Medes under Cyaxares. The prophecy of its destruction by Zephaniah must refer to its capture by the Medes. Strabo also says that it fell into decay immediately after the dissolution of the Assyrian monarchy by the Medes (xvi. p. 737); and this account is confirmed by the fact that it was only a town in the map of the time, and the town is not mentioned, although in his march along the banks of the Tigris, previous to the battle of Gaumata, he must have been very near the spot at which it is supposed to have stood. Under the Roman empire, the site of the town was taken by a town Nysa (Tac., xii. 33); or Nisirine (Ammon., Mar., xvii. 7); and Abulfaraj in the thirteenth century mentions a castle Ninivi.

According to Abulfaraj and other Arab writers, the remains of Nineveh have never been found on the left or east bank of the Tigris, opposite Mosul (Mosul) and partly on the site of the me-
dern village of Nauis, or Nebbi Yunus, which contains about 300 houses. (Rich.) From the account of Niebuhr, and more especially of Rich, it appears evident that there must have been formerly a large city on this spot; though it is difficult to determine whether the ruins described by these travellers are the remains of ancient Nineveh or of a city built in the times of At that night the ruins of Nineveh present the appearance of a range of hills; but from all these hills large stones, frequently with bitumen adhering to them, are constantly dug out in great numbers. The hill of Sipylus is so high as to have been built of stones dug out of the ruins of Nineveh, which, he adds, is an inexhaustible resource. On the largest of these hills or mounds there is a celebrated mosque, which is supposed to cover the tomb of Jonah. The walls and ditches which surrounded part of the city may still be traced very clearly in many parts. Rich calculated the area enclosed by these walls at from one and a half to two miles broad, and four miles long, extending a little way south of Nebbi Yunus; and he observes that on the river or west side there are only remains of one wall, as well as on the north and south extremities, but that on the east side there remains of three walls. It is also his opinion that the part enclosed by these walls formed only a part of a great city, probably either the city of royal precincts, or perhaps both, the practice of fortifying the palace of the king is of an ancient origin. In the East to this day the dwelling of the prince, and indeed of many governors, consists of a number of buildings enclosed in quite a separate quarter; and from what we hear of the Babylonian palaces, Rich believes the palace of the Sipylises and of the sultan of Constantinople, this extent would not be too much to assign for the residence of the Assyrian kings. There are various traces of ruins outside these walls; but they may probably exist to a greater extent than has yet been supposed, since Rich relates that some people who had been digging for stones in a place outside the enclosure, where it would have been impossible to have known from the appearance of the surface of the ground that there had been buildings beneath, found many huge stones laid in layers of bricks and lime. Fragments of bricks, whole bricks, and pieces of gypsum, covered with inscriptions in the cuneiform character similar to the inscriptions at Babylon, are frequently found. (Winer's Bibliotheca Sehich; Niebuhr's Travels; Rich's Narrative of a Residence in Cordistan, and on the Site of ancient Nineveh; and the authorities cited in this article.)

NIO, an interval in music, a discord retarding the 5th, but may be resolved into either the 6th or the 3rd; and though this is the octave of the 2nd, yet it is essentially different in harmony, both as to treatment and effect. [CHORD; THROUGHBASE]

NINUS. [NINEVEH.] NIO, IOS, one of the Cyclades, situated five miles south by west of Naxos, and ten miles north by west of Thera or Santorini. Nio is about nine miles in length and five in breadth, and is separated from the mainland by a narrow isthmus, which is towards the middle of the island. The surface is hilly, but not so rocky or barren as most of the smaller Cyclades. The chief produce is corn, which is of good quality, but the island is deficient in fruit. At Nio is a town, which was anciently called Nio, and is about 2900. The town, called also Nio, is built on a hill on the western coast, above a bay in which there is good anchorage and a fine spring of water issuing out close to the shore. On the eastern coast is another good harbour, called Manganari. The pilots of Nio are reckoned among the best in the Archipelago. Whilst under the Turks, the harbour of this island was a favourite place of resort for the pirates who infested the coast of the Levant.

Nio was called Ips by the ancient Greeks, in consequence, it is said, of having been colonised by the Ionians, before which, according to Pliny (iv. 12) and Stephanus of Byzantium, it was called Phoenicia, from the palm-trees which are on the island. As Nio has been long since disappeared in the same manner as at Delos and other places, where the palm-tree was also found in antient times. (Sp6n; Tavernier.)

Arab, Pliny, and Pausanias speak of the tomb of Homer being at Ios; and the author of the Life of Homer, attributed to Herodotus, reports the epitaph of the poet. The story is that Homer, coming from Samos to Athens, stopped at Ios, which was the native country of his mother, and was there buried. According to the author of the Life of Homer, already mentioned, says that some of the inhabitants of the town, which was built on a mountain, used to come down every day to the sea-coast to attend on the poet during his illness. Tavernier found no antient monuments on the island, but he mentions a medal of Nio in the French king's cabinet, with the head of Jupiter on one side, and on the other that of Pallas with a palm-tree, bearing the legend IHTON. During the middle ages Nio formed part of the duchy of Nio, founded by the Venetians, but John Crispus, the twelfth duke, detached it from the duchy and gave it a separate principality to his brother Marcus, who built a castle on the summit of the hill, round which the modern town of Nio has grown. Marcus also called in many Alba, and grew many vines on the soil. His daughter Adriana Sudrano having married Louis Pisano, a Venetian noble, the dominion of the island passed into and remained with the latter family, until the island was taken by the Ottomans. (Deper; Tavernier.) It now forms part of the kingdom of Greece.

NIOBE, the daughter of Tantalus, king of Lydia, was married to Amphiloch, by whom she had, according to Ovid and other antient writers, seven sons and seven daughters. She is the most commonly received opinion, though Homer (II. xxix. 609. &c.) and Pliny give to the nurse of the infant boy, who was in reality the son of Apollo, the name of Niobe, and this is the opinion of all the Greeks, and the latter by some. The pride of Niobe at having this numerous progeny was so great that she is said in antient story to have insulted Latona, the mother of Apollo and Diana, by refusing to offer at the altars raised in her honour, declaring that she had a better claim to worship and sacrifices than one who was the mother of only two children. Latona, indignant at this insolence and presumption, called upon her children to revenge her, and punish the arrogance of Niobe. Apollo and Diana heard their prayer, and obeyed the entreaties of their outraged parent. All the sons of Niobe fell under the arrows of Apollo, while the daughters in like manner met their death from the hands of Diana. Chloris alone escaped the common fate. She was the wife of Nesteus, king of Pylus. This is the thirteenth of the celebrated women of the now heart-stricken and humiliated Niobe, that was changed by her excessive grief into stone on Mount Sisyphus in Lydia. Pausanias says (i. 21. 3) that the rock on Sisyphus, which was, by the name of Niobe, and which he had visited, was merely a rock and precipice when one came close up to it, and bore no resemblance at all to a woman; but at a distance you might imagine it to be a woman weeping with downcast countenance.

The tale of Nio and her children has afforded a subject for art, which has been finely treated by one of the greatest antient masters of sculpture. It consists of a series, rather than a group, of figures of both sexes, in all the disorder and agony of expected or present suffering; while one, the mother, the hapless Niobe, is seen with an affecting attitude of supplication, and with an expression of deep grief, her eyes turned upwards, implores the unjustly offended gods to moderate their anger and spare her offspring, one of whom, the youngest girl, she strains fondly to and embraces by the hand. The other figures, of various excellence exhibited in this admirable work, its great merit is independent of fine execution, in which it is inferior as a whole to many other well-known productions of Greek art, consists in the strong and forcible expression of sentiment, as expression, grace, propriety, and variety of action, with that unity of effect by which the scene is brought dramatically and at the same time truly before the spectator, and a story of the most affecting interest told in language that cannot be mistaken. The arrangement of the composition is supposed to have been adapted to a tympanum or pedi-
ment. The figure of Niobe, of colossal dimensions compared with the other figures, which are life size, forms, with her youngest daughter pressed to her, the centre; while the rest of the sons and daughters are ranged in various ways on each side, some exhibiting expression of fear, others agonized with Vio. Others, on the other hand, lie dead or dying, and stretched upon the ground. All are graceful, and some of the figures possess also great beauty, and the action and expression of many of the heads offers examples of the most perfect art. The attitude and expression of Niobc herself may truly be called sublime. An eminent professor has observed of this figure, 'The character of the head, though indicative of a more matured age and less delicate than the daughters, still presents an image of the most attractive beauty; while grace, sentiment, and dignified simplicity reign throughout the figure.'

The colossal scale of the principal figure has justly been objected to as a fault. The artist doubtless had two purposes in view when he ventured on this deviation from truth. First was the necessity which he felt of giving a superior height and volume to the apex and key, as it were, of his composition; and next perhaps the desire he had to conciliate the admiration of the beholders by forcing his work upon the attention. But although we should hesitate before taking any exception to the practice of the great leaders and masters of art, yet, generally speaking, any departure from the truth of nature—the real canon of excellence when right and well discovered—is far from commendable, and is, in all probability, to be attributed to his want of experience. It may be argued that they would have been so much the more entitled to our admiration if they had produced their works within those limitations which nature dictates. The production of such exhibits these faults, for they must be accounted for; but it is certain that there is not much of which they are held for other properties, and rather in spite of than because of the licence which their authors have allowed themselves.

The temple, which is this interesting monument of Greek art is attributed by some to Scopas, a native of Paros, who lived about 300 years before the Christian era; while others think it is the production of Praxiteles. Pliny says it was a question which of the two was the author of it. The group was in the temple of Apollo at Sounion at Rome. (Pll. Hist. Nat. xxxi.; Silig, Catal. Artificum, in verb.) Flaminio Vee says the group of Niobe and her children was found at Rome, but outside the walls, near S. Giovanni; but the learned antiquary Fea denies this, and says it was found under the steps of the temple of Apollo. The 'Boxers' were discovered at the same place, and it has been supposed by some that they formed part of the group; the fable being that some of the children of Niobe were slain while thus exercising. (Winkelmann, Sur l'Allegorie, pref.)

All the above statues are in marble, and are now at Florence in the gallery of the grand-duke of Tuscany; but many of them are thought to be copies only, from originals now lost. There is in England a head of Niobe, which is engraved in Select Specimens of Sculpture, published by the Society of Dilettanti (vol. i.), similar in action and expression, but preferable, for its style and execution, to that of the Florence statue; and as there are known reproductions of other works, it is not improbable that the principal and most interesting of the series may also have been frequently copied, and that the figure in the grand-ducal collection, though an ancient work, may come under this class.

The story of Niobe and her children was a favourite one also with the poets of antiquity. Besides the beautiful story in Ovid (Metam. vi. 146), there are numerous epigrams in the Greek Anthology, several of which have great merit, and appear to be descriptive either of the group of figures which still exists, or of some similar group. See particularly that beginning—

For further information and references as to the group of Nion, see Thienc, "Ueber die Epochen der Bildenden Kunst," etc., pp. 356, &c. NION, or NYON. (Waud.)
Novgorod; and then the Kulma, the Kirsenev, the Sura, a rapid river navigable only in the spring, the Wolurga, and the Alatyr. There are few lakes, and none of them are large. The climate is mild, and nurseries and gardens thrive here because of their climate and soil. The inhabitants grow rye, some buck-wheat, millet, peas, and beans, and large quantities of flax and hemp. All the vegetables of Northern Russia are cultivated in the gardens, especially cabbages, carrots, turnips, onions, cucumbers, and melons. The fruits are abundant, and among them, fruits like apples, cherries, pears, and plums; but the two last are not so good as the others. The forests are very productive; the banks of the streams and rivers are cloaked with the finest timber, especially oak and lime trees. The pine, the fir, the beech, and the aspen are found in all the forests. The oaks have been very much thinned; and the great extent of the forests has led to the most extravagant waste. It was not till 1802 that regulations were made for the management of the forests belonging to the crown; but Hassel, in 1821, complains that the undefined privileges of the distilleries, the potash manufactures, and the glass and iron works, are an obstacle to anything like system. In the vicinity of the crown villages in particular, there is a want of cultivation, and the woods are not so extensive as formerly, from which the admiralty obtains the best timber for the navy, no care is taken to make new plantations. Only the Mordwines, who have inherited from their pagan forefathers a religious reverence for fine lofty trees, take care of the forest. But the breed of the Russian breed is found in this province, where the government and many private persons have studied. The beeches are handsome and of a large size. Sheep and hogs are of the common breed. Some poultry, especially geese, are kept; but there are not many horses in the country. The fish in the rivers are bleak, the isinglass fish, and the caviare sturgeon, of which there is a sufficient supply for home consumption.

Manufacture and Trade.—Of all the governments of Russia, Moscow and Vladimir not excepted, Nischnei-Novgorod is that in which the inhabitants are the most generally engaged in manufactures of various kinds, though the province has comparatively few manufactories on an extensive scale. But most of the villages are full of artisans and little workshops, which, though not belonging to a manufactury, yet make a great abundance and variety of articles. There are also in the country many who carry on some business on a large scale, though it is common to find small workshops, particularly those of tinsmiths, making potash, spinning yarn, linen weaving, and making earthenware; are common all over the country. The few large establishments manufacture wollen cloth, leather of various kinds, linen, Russia duck, cardboard, soap, candles, iron, steel, and glass wares.

The exports of the province consist of corn, flour, hemp, flax, yarn, coarse linen, cordage, bass mats, leather, carved and turned wooden wares, oak timber, potash, cooper's ware, iron wire, hardware, glass, and other similar articles, which are supplied sufficient to counterbalance the imports, which are chiefly bar iron, salt, brandy, wine, colonial produce and manufactures.

The population of the province is now nearly a million and a half. The inhabitants consist, 1. chiefly of Russians; 2. Tschuvasches; 3. Mordwins; 4. Tscheremesses; and 5. of some Tartars. The Tschuvasches and Mordwins are probably the original inhabitants, but at present both together hardly amount to 60,000: they however retain their peculiar language and manners; and although they till the earth in the same manner as the rest of the inhabitants, both they and the Tscheremesses are of Finnish origin. The Greek church predominates, and is under the bishop of Nischnei-Novgorod. The Mordwines and Tscheremesses are most of them stringent adherents to the Orthodox Church, but a great portion of the latter are still heathens. They do not worship their gods in temples, but in consecrated places in the open air, which they call Keret-ner, or Iran, which are chiefly in groves and forests.

They have a supreme god, whom they call Thor, and whom, as well as the inferior gods, they worship as an invincible being; they offer sacrifices to him, believe in a state of future rewards and losses, and have a number of priests and conjurers, whom they call Jums and Jomme.

NISCHNEI-NOVGOROD, the capital of the government, is in 50° 20' N. lat. and 44° 28' 36" E. long., at the confluence of the Oka and the Wolga. It consists of three large and two intermediate squares, surrounded by the fortifications. Each of the three squares has five large and two round towers, several of which are in a state of decay, and two gates. In this fortress are the two cathedrals dedicated to St. Michael and to the Transfiguration. In the middle of the palace, opposite the cathedrals, are some small buildings, and an obelisk of granite 46 feet high, in honour of Minin and Pozharsky. 2. The city itself is situated on the declivity of the hill on the Wolga, which is pretty well built in the Russian fashion: the streets indeed are narrow, but there is a large open market-place and a fine quay. 3. The suburb, which twenty years ago consisted entirely of wooden houses, but has been since much improved. This city is the residence of the military governors of Peirs and Nischnei-Novgorod of the civil governor of the latter, the see of the bishop, and the seat of the various public offices. The public buildings and institutions are, 42 churches, of which 30 are of stone, 3 convents, a seminary for schoolmasters, a gymnasium, several schools, a college, two banks, several public buildings, and stalls of wood. The population in 1836 was 24,995, but the domes and steeples of the numerous churches give it the appearance of a much more considerable town. The inhabitants carry on various manufactures of cordage, leather, clothing, iron, tallow, wine, and tallow candles, and there are many salt-kilns, breweries, and tanneries. But the great and annually increasing importance of Nischnei-Novgorod arises from its fair, of which, as it begins on the 1st of November, it is supposed by English merchants, we shall give a rather detailed account, entirely drawn from Russian official statements.

The great annual fair of this part of Russia was established by the Czar Alexis Michaeliavitch in 1648, at Makarieff, at which time its duration was limited to five days. New carriages and horses were also admitted, and they manufactured for the fair for the first time. After the institution of the fair, new rates of the duties were promulgated in 1679, 1680, 1691, and 1698, by the last of which every facility was granted to foreigners. In 1750 the fair had become so considerable that the government built a vast building of wood, containing 900 shops; but the quantity of goods brought from Europe and Asia increased every year in such a degree, that the old bazaar could not contain half of them, and in 1809 the emperor Alexander ordered a new building to be erected, which was opened 1800. This building was finished in 1821, and doubled in size. But even this alone was not sufficient, and a great portion of the goods were placed under sheds, the number of which it was necessary to increase every year, till they at length amounted to 1800, the rent of which and that of the shops in the bazaar produced annually 30,000 rubles.

The government had devoted a sum of 600,000 rubles to the erection of this building, which was scarcely completed when it was totally destroyed by a dreadful fire on the 18th August, 1816. The emperor Alexander immediately gave orders for the erection of a more solid and secure edifice; at the same time it was thought desirable to remove the fair to some other place which should afford the merchants greater facilities of communication, and for unloading and loading boats, that it might not be necessary to shut up the Tschusnei-Novgorod, which is in the centre of that immense system of inland navigation which covers Russia as with a net, and affords a communication from this point with the two capitals, with the White Sea, the Gulf of Finland, and the Baltic. A road of pencil begins opposite the left bank of the Oka, formed by that river on the south, the Wolga on the east, and lake Mestcherskoe, which has a communication with the Wolga a little farther to the north, but is chosen for the greater part of the navigation first of all to raise the ground, which was inundated every spring by the Wolga: to procure earth for this purpose, and likewise to facilitate the movement of the boats, a broad canal, in the form of a horse-shoe, was dug, which is 12 feet wide and 4 feet deep. On the other side it communicates by means of lake Mestcherskoe with the Wolga.

On the plateau enclosed by this canal there is now a whole town of stone magazines, built in the form of a large
oblong parallelogram, surrounded with shops, before an edifice adorned with three rows of columns, which is the hotel of the governor, in which the local authorities reside during the fair. Forty-eight blocks of buildings, separated by streets which intersect each other at right angles, extend behind this parallelogram. The number of the shops is about 2524, and over each there is a small apartment, in which the merchant may reside. All these buildings are roofed with iron, and the coverings of the open galleries which run along all the façades are likewise of iron, and supported by eight thousand elegant cast-iron pillars. A very broad street, passing through the centre of this commercial town, terminates in a church built in a noble and rich style. A little before the church, in two transverse rows and the right and left, are the Chinese shops, the fantastic architecture of which, their turned-up roofs, surmounted with flags and long streamers which are moved by every breath of air, give a variety to the appearance of these immense edifices. On the same line, beyond the canal, there is on the west an Armenian church, and on the east a mosque. The remainder of the peninsula beyond the canal round the above-mentioned mosque is occupied by a great number of wooden booths, in which are deposited goods less liable to spoil, such as iron, leather, cordage, &c. There too are the theatre and the numerous tents of the Tartar restaurateurs. An island in the Oka, between the town and the fair, is covered with similar booths.

All this vast, regular, and handsome town of warehouses, the erection of which cost eleven million rubles, presents for ten months in the year the silence of a desert; but scarcely is the flag announcing the commencement of the fair hoisted on the 29th of June, when all the streets and warehouses are filled with a countless multitude who have flocked here for the vast capital for the want of it. All our ministry of finance, the trading towns, from the shores of the Baltic and the Caspian, from Bokhara, Khiva, Kokand, and Taschkend, from Asia Minor, from the mountains of Turkistan and the frontiers of China, and, of late years, from different parts of Western Europe. All these magazins and booths are filled with the produce of the most diverse countries, and thousands of boats are employed in landing the goods, or in taking them on board to convey them to the seas which wash the northern and southern shores of the empire. Other goods, such as wooden wares, are piled up even in the open country, and farther on are long lines of carts with their horses, which serve both as magazines, and lodgings for the country people.

The following table shows the gradual increase of the business done at the fair from 1830 to 1837 inclusive:

| Years | Value of Goods for sale | Value of Goods in Warehouses and booths in | Total of and Goods in | Total of | Total of | Total of | Total of | Total of |
|-------|-------------------------|-------------------------------------------|-----------------------|---------|---------|---------|---------|---------|---------|
|       | Rubles                  | Rubles                                   | Rubles                | Rubles  | Rubles  | Rubles  | Rubles  | Rubles  | Rubles  |
| 1830  | 124,970                 | 91,264                                   | 14,466                | 150,000 | 22,234  | 24,250  | 45,224  | 45,224  |
| 1831  | 120,470                 | 98,229                                   | 12,245                | 126,700 | 22,537  | 25,074  | 47,611  | 47,611  |
| 1832  | 138,207                 | 164,374                                  | 150,000               | 150,000 | 22,234  | 24,250  | 45,224  | 45,224  |
| 1833  | 143,152                 | 117,210                                  | 150,000               | 150,000 | 22,234  | 24,250  | 45,224  | 45,224  |
| 1834  | 143,475                 | 107,653                                  | 150,000               | 150,000 | 22,234  | 24,250  | 45,224  | 45,224  |
| 1835  | 143,241                 | 116,925                                  | 150,000               | 150,000 | 22,234  | 24,250  | 45,224  | 45,224  |
| 1836  | 145,955                 | 126,514                                  | 150,000               | 150,000 | 22,234  | 24,250  | 45,224  | 45,224  |
| 1837  | 146,638                 | 125,567                                  | 150,000               | 150,000 | 22,234  | 24,250  | 45,224  | 45,224  |

Though the crisis which was felt in all the commercial cities of Europe had some effect on the fair in 1837, the result was nearly equal to that of 1836, and with respect to Russian manufactures of cotton, silk, and wool brought to the fair, the quantity was greater than ever. The value of Russian manufacturers exposed to sale and sold was as follows:

<table>
<thead>
<tr>
<th>Exposed to Sale</th>
<th>Sold</th>
<th>Rubles</th>
<th>Rubles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton manufacture</td>
<td>27,742</td>
<td>22,234</td>
<td>570</td>
</tr>
<tr>
<td>Woollen do.</td>
<td>11,008</td>
<td>9,210</td>
<td>600</td>
</tr>
<tr>
<td>Hemp and flax do.</td>
<td>4,906</td>
<td>3,991</td>
<td>250</td>
</tr>
<tr>
<td>Silk</td>
<td>8,316</td>
<td>6,744</td>
<td>200</td>
</tr>
<tr>
<td>Furs</td>
<td>7,496</td>
<td>6,921</td>
<td>000</td>
</tr>
<tr>
<td>Leather and leather manufactures</td>
<td>2,224,360</td>
<td>1,688,360</td>
<td></td>
</tr>
<tr>
<td>Produce of the mines and foundries</td>
<td>21,127</td>
<td>18,645,700</td>
<td></td>
</tr>
<tr>
<td>Porcelain, earthenware, mirrors, and glass</td>
<td>1,230</td>
<td>995,600</td>
<td></td>
</tr>
</tbody>
</table>

To the above must be added the receipts of the manufactories and restaurateurs, both Russian and Tartar, 73,900 rubles; the theatre, 50,000; public baths, 25,000; horses and cattle sold during the fair, 870,000; and many other articles of less importance. The number of shops and booths last year was 45,333, and the rent 471,178 rubles.

The number of strangers attending the fair is estimated at less than 300,000. (Extracted from the following Russian journals: Journal of the Department of the Interior; Journal of Manufactures; Commercial Gazette.)

The other principal towns in this government are: Aristov, 9,000 inhabitants, with manufactures of cloth, leather, silk, iron, and soap; and considerable trade in linen, malt, cloth, and shoes; Podischnik, 5,000 inhabitants, with an 
NIT. [Nitric Acid]

NITRE (Saltpetre). [Potassium.] Nitric acid, a substance of great importance and utility in scientific chemistry and in most chemical arts. It was formerly called spirit of nitre, or niter, sper's or nitre; and when much diluted with water, it is called aquafortis. This acid exists largely in nature, and principally in combination with potash and with soda, forming nitrate of potash, or nitre, which exists in the East Indies, and nitrate of soda, which is found in South America; from these countries immense quantities of these salts are imported for numerous uses.

Nitric acid is composed of oxygen and azote. In proportion thereto it is stated; but it is here to be observed that it never is met with except in combination with a base, nor can it be artificially obtained except in combination with water or a base constituting a salt called a nitrate.

The method by which nitric acid is obtained is that of heating, either in an iron, earthen, or glass retort, a mixture of sulphuric acid and nitre, or nitrate of potash; owing to the greater affinity existing between the sulphuric acid and potash than between the nitric acid and potash, sulphate of potash is formed, which remains in the retort, while the nitric acid separated from the potash is vapourised, and condensed in the receiver with the water, or with air.

For manufacturing purposes, in which extreme purity is not so important, iron stills are generally used, and about an equivalent of acid and nitre are employed, with some water. But when pure acid is required, glass retort is used, and two equivalents of acid are employed instead of nitre; by this operation bisulphate of potash is obtained, which remains in the retort, whilst sesqui-hydrated nitric acid, which is the strongest procurable, is condensed in the receiver.

The properties of nitric acid are, that when pure it is a colourless liquid, but is usually yellowish, owing to a small unimportant admixture of nitrous acid, which does not in anywise affect the use of it, and may be expelled by heat. Its smell is very agreeable, and disagreeable to it, and it is a gaseous acid, white fumes. It is so acid that it cannot be safely tasted without being much diluted, and is even then very sour. In its concentrated state it stains the skin of a yellow colour, and eventually it is destroyed and peels off.

NITIC NATURIS. [Enriched metal] by which means they are dissolved or acted upon by it, as it is dissolved with water, and then in general nitric oxide gas is evolved, which, on coming into the air, absorbs oxygen and becomes nitrous acid vapour; hence the red colour observed when metals are dissolved in this acid.

The density of the strongest acid is 1·5; when mixed with water it gives out considerable heat; it acts strongly on vegetable blue colours, and decomposes alkaline and metallic carbonates with effervescence if previously diluted. When colourless nitric acid is exposed to the action of the light, it undergoes partial decomposition; and owing to the formation of nitrous acid, it is rendered either pale or deep orange, according to the length of time it is exposed to the sun's rays.

Nitric acid, as it exists in nitrate of potash and other anhydrous nitrates, is composed of:

- Five equivalents of oxygen
- One equivalent of azote

Equivalent

54

But no gaseous nor any liquid or solid compound of these proportions of the elements is obtainable; and the strongest liquid acid which has hitherto been procured, and which has a specific gravity of about 1·5, is:

- One and a half equivalent of water
- One equivalent of nitric acid

Equivalent

54

57·5

It has already been observed that nitric acid is used for numerous purposes; such as the refining of gold and silver, in preparing various metallic and saline solutions for medicinal purposes, and the use of the dyer and calico-printer.
in scientific chemical researches it is most extensively employed; its saline compounds are termed nitrates. For an account of these we refer to the particular alkalis, earths, and metallic oxides, under their several heads.

NITRIC ACID.—Medical Properties of. This acid in a concentrated form acts as a violent corrosive poison, and is therefore never used in an undiluted state for internal administration, but it is sometimes applied externally, when the object is to effect the speedy destruction of any part. Nitric acid, by its frequent employment in the cleansing of metal, is often the cause of accidental, rarely of intentional, poisoning, and it surpasses all the other mineral acids in the rapidity of its action, and in the consequent necessity for prompt and judicious treatment. It may be determined, as to whether it has been the poisoning agent by its causing the parts which it has touched to be at first white, but soon after of a yellowish colour, which cannot be removed, like the stain of iodine, by adding caustic potash, but on the contrary becomes orange in colour. (Perera.) When it has been taken internally, the lining membrane of the mouth also peels off in a state resembling parchment.

The most appropriate antidotes are such substances as combine with and neutralize the acid; chalk or magnesia, made; and a mixture seer-on from the salicylic acid, the plaster of the apartment, bruised down and drank,—will answer best. While these are preparing, the acid should be diluted by the free use of any fluid, milk or oleaginous matter being preferred. The carbonates of the alkali metals are used with eligibility, as the nitrate compounds themselves possess corrosive properties. (Christison.) A solution of soap may be administered, though some object to it from the presence of the alkali in it, but apparently without sufficient ground. If recovery should take place, the patient long suffers from indigestion, and is almost always constipated.

In an undiluted form, nitric acid is a most valuable application to sloughing phagedenic ulcers; also for destroying warts, or causing vesication on the stomach in Asiatic cholera, or for dropping into a carious tooth to relieve toothache. For all other purposes it is very largely diluted.

In its action on the system it differs from other acids, inasmuch as it does not produce the cooling and thirst-allaying effect which they do, but rather the contrary causes a feeling of warmth in the stomach, with thirst and increase of appetite. The use of it continued for some time gives rise to general effects; an excitement is felt through the whole system; the pulse becomes quick, the exhalation great, and a wish to secrete from the salivary glands, mucous membranes, the liver, and kidneys is manifest. Perseverance in the use of this agent however at last produces many bad consequences; and in persons much disposed to bleeding from the lungs, it almost invariably causes an hemorrhage to occur, as well as heat in the body and obstinate cough. Very largely diluted, it furnishes one of the best drinks in fevers accompanied with great prostration of strength.

It is also a very excellent tonic in many cases, and seems to be the best substitute for the bile where that secretion is scanty. That it greatly augments the secretion of bile, the nature of the evacuations abundantly proves. Hence it differs from almost all other tonics in not causing constipation, but rather the contrary. In calculous diseases of the phosphatic character it has been used with great benefit; and also, very largely diluted, it has been injected into the bladder as a direct solvent. [Lithotriturgy] In the treatment of scrofula it is a most valuable remedy, but which every now and then suspended, owing to the effects which it produces on the stomach.

It has been regarded as a substitute for mercury in some cases, especially as it promotes the secretion of saliva. It ought never to be given at the same time as mercury, nor ever in close of any mercury preparations; as a poisonous nitrate of mercury may be formed in the stomach. Lastly, nitric acid increases the efficacy of many other medicines, such as ammonium, cepsaria, and opium.

Nitric acid in the form of vapour was formerly employed as a dressing for the liver, particularly in India, but it does not seem entitled to much credit.

NITRIC OXIDE, the nitrous air of Priestley, since termed deutoxide of azote, deutoxide or binoxide of nitro-gen, &c. Although this gaseous body had been obtained by Hales, yet it is to Dr. Priestley that we owe the first distinct account of the method of procuring it and a description of its properties.

It has been already mentioned that when certain metals are put into dilute nitric acid, they are dissolved. During their solution, owing to the partial decomposition of a portion of the nitric acid and the absorption of oxygen by the metal, a gaseous body is plentifully formed and evolved, which has the following properties:—it is gaseous or permanently elastic, not having been hitherto confederated with any other body; it is colourless and probably tasteless and inodorous; but when an attempt is made to inhale it, it excites violent spasms of the glottis by meeting and exercising the oxygen of the air, which converts it into nitrous oxide. Its specific gravity is about 1·040; 100 cubic inches weighing rather more than 32 grams. Water at 60° dissolves about 11 per cent. It has no action on litmus paper, nor does it in any way exhibit the properties of an acid; but as already noticed, nitrous acid is formed as soon as it comes into contact with oxygen, and then it reddens litmus paper; its property distinguishes it from all other gases whatever, and renders it a test of the presence of uncombined oxygen; this is the gas first employed by Dr. Priestley in the account of the method of procuring nitrous oxide. It is soluble in solution of protoalbumin of water or urine, and is a stronger oxidising agent in some cases; thus charcoal and phosphorus immersed into it when they are in vivid combustion, burn splendidly in it, but a candle and burning sulphur are extinguished; it is probably decomposed when passed through red-hot tubes. As the vapour passes through these effects it is produced as a gas, and is easy to notice, and in splashes it acts by the phenomena of electrical sparks. It is also decomposed when exposed to air or oxygen, which take away half the oxygen and convert it into nitro oxide. It is soluble in solution of protoalbumin of urine, and it is a stronger oxidising agent in some cases; thus charcoal and phosphorus immersed into it when they are in vivid combustion, burn splendidly in it, but a candle and burning sulphur are extinguished; it is probably decomposed when passed through red-hot tubes. As the vapour passes through these effects it is produced as a gas, and is easy to notice, and in splashes it acts by the phenomena of electrical sparks.

It is decomposed:

NITRITE. [Nitrous Acid] Nitrobenzide. When benzoin is added in small quantities at a time to concentrated hot nitric acid, it takes place, and the resulting compound remains dissolved while the liquid retains its heat, but on cooling it separates and floats on its surface; this substance, when removed, distilled, and washed with water, is nitrosobenzene and possesses the following properties:

It is liquid, has a light yellow colour, a very sweet but aromatic odour, it produces a change in litmus paper; it is soluble in water, and is a stronger oxidising agent than nitrous acid. In a liquid state neither chlorine nor bromine has any action upon it; but when chlorine is passed through a red-hot tube, hydrochloric acid is formed. When heated to a red heat, it decomposes, and the deposited nitrous acid is evolved. In a liquid state neither chlorine nor bromine has any action upon it; but when chloroform is passed through a red-hot tube, hydrochloric acid is formed. When heated to a red heat, it decomposes, and the deposited nitrous acid is evolved.

NITROGEN. [Azote.]
NITROHEMATIC ACID. This acid was discovered by Weber. Its name is derived from *hemasa* (*olva*), blood, in allusion to the colour of its salts. It is prepared by mixing chloroform or nitric acid with a hot spirit of iron and digesting the mixture with hydrate of barytes and water.

The protioxide of iron, separated, becomes peroxide at the expense of the nitric acid, and a new acid is formed, which is the nitromethane acid; it is separated by a tedious process from the barytes with which it forms a salt, and then has the following properties:

It has the form of small brown crystalline grains, and scarcely any taste; when exposed to a moderate heat, it begins to lose its fluidity and at once detonates with the evolution of light, but with the formation of cyanide of ammonia and the deposition of carbon, which burns without leaving any residue. It is but slightly soluble in water, and the solution is yellow; it dissolves in nitric acid. When dissolved in nitric acid, it gives a red colour; the alkaline and earthy salts of this acid have a bitter taste, and when heated they detonate like gunpowder. The nitroso acid, which are of a deep blood red colour; but when dry, they are of a deep brown with a tint of green and a semimetallic lustre; the alkaline and earthy salts of this acid have a bitter taste, and when heated it detonates with the evolution of light, and the formation of much cyanide of ammonia.

This acid does not appear to have been analyzed.

NITROEUCIC ACID, a compound prepared by Braconnot, consists of sulphuric acid and silver nitrite, which are used in the preparation of the saltpetre. To obtain it, the leucin is dissolved in nitric acid with the aid of a gentle heat; slight effervescence occurs during the operation, but without the formation of red vapour. By evaporation the liquid becomes a mass of white slender crystals, the excess of nitric acid is distilled off, and the crystals are left on the paper to get rid of the excess of nitric acid, and they are then purified by solution in water and recrystallization.

This acid has a sour taste, but not strongly so. With bases it forms peculiar salts, of which only two have been described, namely the nitroecuic of lime and of magnesia; these are both crystallizable, and, unlike the nitrates of these bases, they do not deliquesce when exposed to the atmosphere when heated. Nitroecuic acid has not been analyzed.

NITROMURIATIC ACID. [CHLORINE.]

NITRONAPHTHALASE, a substance formed by M. Laurent in 1835. It may be prepared by boiling naphthalin in a nitric acid, whose solubility is diminished by this means; by this process the sodium nitrate is separated from the solution in boiling alcohol and crystallization; it has the form of a square prism terminated by acute pyramids, and a broad face, the form of which is not altered at a temperature below 110°. It may be sublime without decomposition, and the vapour, on condensing, crystallizes. It is neutral, and insoluble in water, but alcohol and ether readily dissolve it. By chlorination it is decomposed, and chloronaphthalin is formed; bromination also produces a new body, which is called dibromonaphthalin, and which is not altered at a temperature below 200°, while it scarcely acts upon copper, lead, or iron, until diluted with water; and the solution of silver which is formed may be moderately diluted before any sulphate of silver separates. On account of these properties for the latter requires to be used in separating silver from old plated articles; the silver may be precipitated from solution either in the state of chloride by the addition of common salt, or, after the silver has been dissolved, the copper from which the silver has been separated will precipitate it in the metallic state, when water is added to the solution.

In 1835 M. Pelouze discovered an acid compound of sulphur, oxygen, and azote, to which he gave the name of nitrussulphuric acid, and which he was not able to separate into a separate state. It formed however salts with ammonia, potash, and soda. Its properties have not been very minutely examined, but it was found to consist of:

| One equivalent of sulphur | 16 |
| Six equivalents of oxygen | 48 |
| Two equivalents of azote | 28 |

Equivalent 92

NITROUS ACID, a compound consisting of the same elements as nitric acid, but combined in different proportions. It consists of, or rather is equivalent to, nitric acid deprived of one-fifth of its oxygen. It may be prepared either in a gaseous or fluid form, in which it differs from nitric acid, or in the form of a compound with either water or a base to hold its elements in combination.

Gaseous nitrous acid is formed by mixing in an exhausted
NITROUS GAS. [NITRIC OXIDE.]

NITROUS OXIDE GAS. This compound was first obtained by Priestley, who called it nitrous gas: he procured it by exposing nitric oxide gas to the action of iron, which deprived it of a portion of its oxygen, and reduced it to the state of nitrous oxide, sometimes called protoxide of nitrogen or gaseous oxide of azote. The properties of this gas were minutely examined by Davy at an early period of his brilliant career. The best method of procuring it is to subject nitrate of ammonia to moderate heat in a retort; both the nitric acid and ammonia are decomposed, and their elementary oxygen, hydrogen, and azote recombine in such proportions as to form water and nitrous oxide gas.

The properties of this gas are, that it is colourless and transparent, its smell is peculiar but rather agreeable, and its taste is sweet: 100 cubic inches weigh about 47 grains, and its specific gravity is to that of air therefore about as 1:5 to 1. Water absorbs about an equal bulk of this gas, which, on being heated, it gives back unchanged. It has no action upon uncombined oxygen, in which it differs remarkably from nitrous oxide. Nitrous oxide gas is composed of one volume of oxygen and two volumes of azote condensed by combination into two volumes, or by weight it consists of

| Four equivalents of oxygen | 22 |
| One equivalent of azote    | 14 |

NITROUS GAS. [NITRIC OXIDE.]

Equivalent | 46 |

Nitrous oxide supports combustion, and a taper, ignited phosphorus, charcoal, and charcoal burn vividly in it; at a red heat it resolved into its constituent gases in the proportions stated. When a mixture of one volume of this gas and one of hydrogen is fired by the electric spark, water is produced, and one volume of azote remains: this shows that it is decomposed in half a volume of water required to form water with the one volume of hydrogen.

This gas was supposed to be irrespirable, until the contrary was proved by Davy, in his "Researches on Nitrous Oxide."

To that work we must refer for an account of the very exhalant and disastrous effects which this gas begins to exhibit when respirable, the same as the nitrous oxide.

NIVELLES, a town of South Brabant, in 50° 35' N. lat. and 4° 18' E. long., on the little river Thienne. It contains manufactories of fine linens, lace, and woollen stuffs; oil-mills and a paper-mill. The population in 1836 was 7204. It has a college as the chief place of a district, with 127,881 inhabitants. It is distant 15 miles south from Brussels.

NIVERNOS, or NIVERNORIS, LE, one of the provinces into which France was divided before the Revolution. It was bounded on the north by Orléans and the district of Auxerre in Bourgogne; on the east by Bourgogne; on the south by Bourbons; and on the west by Berry or Berry. It comprehended a number of subordinate districts, as follow:

- Le Vaux, or Les Vallées de Nevers. Nevers.
- Le Donzais.
- Le Vaux de Touraine, or Clunécy.
- Les Vallées de Montenoison.
- Les Vallées des Amognes.
- Le Pays d'entre Loire et Allier.
- Le Bazois.
- Le Morvant.

It is almost entirely comprehended in the modern department of Nièvre, to which we refer for an account of the natural features and present condition of the district. It shall here only notice its feudal history. It consisted of 100 counties of Nevers. This county does not appear to have been constituted until the ninth or tenth century, when it was a dependency of the duchy of Bourgogne, to which it was at intervals during that century reunited. The regular succession of its counts begins with Otton Guillaume II, who died in 1015, and was succeeded by his son Guillaume III, who died in 1044. The latter was accepted as that of Tonnerre: he was contemporaneous with Louis VI. of France, to whom, in his contests with the English, his valets, he rendered considerable assistance. He died in 1047, and was succeeded by his son Guillaume IV. (le Jeune) to the second crusade (1147); and in 1148, the count of Nevers, was the wife of Pierre de Conti, the unfortunate emperor of Constantinople (1148). In 1170, Count Guillaume of Nevers, Auxerre, and Nivernos, in 1146, succeeded, and succeeded to different branches of the family. That of Nevers was for a time beded jointly with the counts of Flavigny and Rethel by Louis II., who fell in the battle of Crecy (1346). It was succeeded in 1348 by a part of the local family of Bourgogne and Clèves, and was raised to the rank of duchy in favour of François I. of Clèves by the king François I. of France (1393).

This François, duke of Nevers, was one of the most distinguished French captains of war, and signalized by valour and skill in the wars of Henry II. against the emperor Charles V. and Philippe II. of Spain. By the marriage of his grand-daughter the duchy came to Louis de Gonzaga, or Gonzaga, son of the duke of Mantua, who bore a distinguished part in the religious wars of the seventeenth century, and it remained in the Gonzaga family until 1702 to Cardinal Mazarin, a few years after which it was united to the French crown.

NIZAM, the title of the sovereign of Hyderabad, derives from Nizam-ul-Mulk, who died on the death of Aurungzeb obtained possession of the Mohammedan conquests in the Deccan, his name being assumed as a title by his successors in the sovereignty. After reigning 31 years, Nizam-ul-Mulk died at a very advanced age, in 1748, succeeded by his son Nassir-ul-Mulk, who was assassinated in 1750. His grandson Muzaffer Jung was then placed on the throne, and also assassinated in the year following. The third son of Nizam-ul-Mulk, Sabutul Jung, then reigned until 1763, when he was put to death by his brother Nasir Ali, who then took the reins of government, and held them till his death in 1803. His successor Sekundar Jang died in 1829, and was succeeded by the reigning Nizam.

The province of Hyderabad lies between the 24th and 26th degree of N. lat. and between the 66th and 70th degrees of E. long. It is bounded on the north by Kutch, and the ceded districts on the Nerbudda; on the south by the rajah of Berar's dominions and the Northern Cen. on the south by Guntur and districts ceded by the rajah M. on the west by the South and Saflaghali in the country, Beypore, and Aurungabad. The extreme length of the province from north to south is 420 miles, and its extreme breadth 360 miles: its area is about 95,000 square miles. The surface is hilly, but not mountainous. There is a considerable extent of good table-land: the climate is much more temperate than the lower lands in the same latitude. There are numerous streams during the rainy season, but at other times they are dry, and at no time are any of them navigable. But little is known of the physical features of the country or of its productions.

The Nizam is one of the native sovereigns with whom East India Company has subsidiary treaties. The chief provisions contained in these treaties are: 1st, protected

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the British government against all enemies, foreign or domestic; 2nd, mutual co-operation in the event of hostilities with other powers; 3rd, the maintaining of a British force for the protection of the native state; 4th, the reception of a British resident, by whose counsel the native government is bound to abide as regards all public affairs, internal and external; and 5th, the abandonment on the part of the native prince of all political intercourse with other powers, except through the medium of the British government.

This system the native princes are little more than viceroys, who administer the government and merely transact the business of their superior; and in fact the British residents appointed under subsidiary treaties are not so much ambassadors as they are ministers. The first treaty made by the British resident in 1766, by which he promised to afford him military aid, and in return received from him the cession of the Northern Circars; but the first subsidiary treaty, as above explained, was made with him in 1790, preparatory to the war with Tippee Tippoo. A second subsidiary treaty was made in 1793, and the first was concluded in 1800. The force which the British agreed then to provide was eight battalions, of 1000 men each, of native infantry, and two regiments, of 500 each, of native cavalry; and the Nizam agreed in return to cede to the English government in 1798, the first as near as possible to the subsidiary treaties of 1792 and 1799, that followed the wars with Tippoo. In 1803 an arrangement was made, under which the Nizam agreed to receive a regiment of 1000 European soldiers instead of 2000 natives. Sekundar Jah, who succeeded his father, died on the 27th of July, 1788, as near as possible to the subsidiary treaties of 1792 and 1799, that followed the wars with Tippoo. In 1803 an arrangement was made, under which the Nizam agreed to receive a regiment of 1000 European soldiers instead of 2000 natives.

Nizam. [Nizic.]

D'AnVILLE, DÉ, the title of an old and illustrious family of the French nobility, which originally belonged to the province of Limousin, where it had a château and hereditary dominion not far from Brives. Mention is made of the lords of Noailles in old documents as far back as the beginning of the fourteenth century, and it is said that the name Noailles (an anagram of Noailles) gives the genealogy of the lords of Noailles, beginning with Hugo, who lived in the first part of the thirteenth century, and who went to the Holy Land with Louis IX., and died on the journey. Many individuals of this family were received into the ranks of the French nobility by the addition of the title of Noailles to their personal names, and the title of Noailles is now in the possession of the descendants of the family.

Nobility. The slightest attention to the nature and the actual experience of man must convince every one that the British nobility has a tenacity and audacity in the condition of the persons composing it. Take half a dozen youths, and place them in a society apart from all other persons of their kind; place them under no other condition than that each person shall enjoy what is his own in his own way; let the whole world be equal and each person the master of advantages which are not those of mere nature; and it is certain that at the end of fifty years they and their families will be in a state of great inequality, that some one among them will have attracted to himself more of the exclusive advantages of the state than the rest; there will be not only a difference but a very great difference between the most and the least successful of the party.

This arises from the inequality of the physical, the moral, and intellectual power of each, that is, of some one of those qualities which we call advantages, as obtained by the introduction of principles and habits at a very early period of life, the things in short which make the man himself, independently of the adventitious advantages which are derived from the possession of things external to himself. Thus bodily strength, adroitness, quickness of eye, capacity of bearing fatigue, steady industry, frugality, temperance, caution, foresight, aptness to seize opportunities, avidity, and the like, are in all societies the property of the amused, and the chance of acquiring them is very much in the power of the prevailing party. The distinction in the degree to which these qualities are developed is the determining cause in the produce of inequality, which arise from the possession of things external to himself.

When once a little advantage is gained, and another generation arises starting in life with the possession of the advantages which the talent or the good fortune of the father secured for it, if the same good physical, moral, or intellectual faculties are inherited, as may be the case, it is manifest that the elevation will become higher and the distinction greater. This will go on in an accelerating ratio, for the adventitious advantages operate as in a series of compound interest. On the other hand there may be a declension in another, till the lowest possible point of destination has been reached. It seems that if once the principle of property is adopted, and unequal inheritances are sanctioned in the possession of that which belongs to him, what we have described must necessarily take place. Society may by its institutions do something to restrain this tendency, or something which shall in its effects promote it; but as long as the state continues to be marked with inequality, it cannot abide. Such measures can be desirable, it is not our present business to discuss.

It is thus, we conceive, that the distinction of nobles and vulgares, which we find in the earliest records of human society, must have originated. Political consideration and political power will in some degree always follow wealth; and thus it has been that a larger share of influence in the direction of the affairs of a community has always fallen to the lot of those in whose hands, by their own exertions or those of their ancestors, a
larger share of adventitious advantages had been accumulated than in the hands of others less able or less fortunate.

 Nobility, in the earlier stages of civilization, consisted, it is probable, in nothing more than the union of political power with wealth; but this would soon pass into that other state in which we in Europe now see it, where the particular political advantages were guaranteed to the family of him who once possessed himself of them, by which means there was created a new and very important distinction in society, and it became necessary that society should decide who should inherit these advantages, which was constituted an order endowed with such privileges. Being once secured as an hereditary possession, these privileges might fall to persons who had not wealth or the means of obtaining it, or the influence and power which wealth brings with it.

When once society had thus established an order and regulated the means by which persons might be admitted into it, the desire would become general of admission to the privileges and advantages which belonged to it, in persons who had not wealth, and to aspire to such advantages. It was then easily discovered that society had thus an expensive way opened to it of rewarding very eminent services. A community has not always manors and lands to give to the man who performs for it such services, nor are money pensions always continued from generation to generation, agreeable to those who contribute to the payment of them. But a society accustomed to such an order and sensible of the benefits which attend the existence of such a state of things willingly sees advanced into it men who are distinguished by his service, and is willing to confer on eminent services, but not of great. To the heads only are political privileges given, the chief of which is, that the English peers have seats in the House of Lords, and consequently a voice in all projected changes of the law. But the junior members of the family are not neglected, and have certain titles or honourable distinctions united with their names.

By the English constitution the privilege of placing a family in the rank of the nobility is vested solely in the king. The phrase by which this is usually expressed is, that the king has the power of granting them titles of ancient wealth, with sometimes, though rarely, persons of large fortunes who have been recently acquired; and 5, Persons promoted to high judicial appointments, as the lord chancellor, the chief justice of the King's Bench, and others, usually called the latter lords.

Of the 41 persons who were first admitted into the order of the English nobility by King William IV., previous to January 23, 1836, there were—

Irish peers...10
Scotch peers...6
Members of families already noble...7
Possessors of ancient inheritances...6
Connected with the legal profession...6
For political services...6
For naval services...1

New creations are essential to keep up the order, as extinction is perpetually taking place in a nobility such as the English, where few of the titles descend in any way than to the male descendants of the person first ennobled.

There are modern communities, such as the United States of North America, in which there is no nobility in any respect resembling that of Europe. Wealth of course gives some influence and importance to the person, but it is also an object of jealousy, which must always be the case, more particularly in democratic constitutions. Office, as long as it is held, gives greater distinction than wealth; but office is only held for a short time, and wealth, which may be transmitted by an individual, is seldom transmitted to a single person, but is usually distributed in moderate or small portions among several persons. Thus it has been observed, that in the United States a family seldom remains great in wealth or importance for generations.

Names which have been made illustrious by an individual are remembered only because of him who last elevated them to distinction, and the descendants of the wealthy lose with their wealth the remnant of that imperious which for a considerable time possessed the 18th century; distinction after another sinks into obscurity, and its place is soon filled by a name before unknown.

NOCE'RA DEI PAGANI, the Roman NUCERIA, a town on the south-eastern border of Campania, and now belonging to the province of Princetino Cosa. It is situated at the opening of a valley into the Campanian Plain, at the foot of that offset of the Apennines which stretches from the central ridge to the peninsula of Sorrento, and on the high road from Naples to Salerno. It is a short distance from the sea, and has been described as a town, nearly planted with vines and Indian corn. The country is artificially irrigated from wells. The modern Nocera is an open straggling town: it is a bishop's see, has several churches, and convents, a clerical seminary, fine barracks for cavalry, and a fort; but the name of an ancient city, it is said, may be traced back to a small town, which was forsaken on account of the earthquakes, and is on the hill above. About a mile from the present town, on the road to La Cava, is a circular church, which has been mistaken by some for an ancient temple, but it evidently dates from the earlier ages of Christianity. It is situated similar in form to that of St. Stefano Rotondo at Rome; an octagonal basin occupies the centre of the building, the pavement of which is considerably below the exterior level. The double range support the roof upon arches. The interior is gloomy and the walls are green from the dampness. (Keppel Craven, Tour through the Southern Provinces of Naples.)

Nuceria was destroyed by Hannibal (Livy, xxii. 14), and after whose departure for Carthage the inhabitants were settled by the Romans in Atella, the inhabitants the latter town having been transferred to Calatia (xxiv. 3). The town of Nuceria was however rebuilt and became a Roman colony. After several vicissitudes, it was partly destroyed in the reign of Constantine the Great, and again by the Visigoths in the eleventh century, when the inhabitants resorted to the present site. The adjunct ' Dei Pagani' when it bears has been variously accounted for; some derive it from the Saracens, called Pagans in the middle ages, who occupied the town; others from a baronial family, Pagani by name, one of whom, Hugh de Payen, was grand-master of the Templars in the time of the emperor Frederick I. (Lambert, Lettura intorno all' Origine di Nocera, 4to, Naples, 10.)

NOCE'RA, NUCERIA, a town of ancient Umbria, now belonging to that province of the Papal State called 'Delegazione di Perugia.' It is built on a steep hill on the eastern side of the central ridge of the Apennines, near the source of the river Tenna, the tenia of the ancient, which is an affluent of the Tiber. Nocera lies on the high road from Rome to Pesaro and Rimini, which, after passing by Iguvium, the modern Gubbio, crosses the Apennines near the source of the river Tenna, the Tenia of the ancient, which is an affluent of the Tiber. Nocera was of importance, being mentioned by Livy (ix. 38) as having surrendered to the Romans, with other towns of Umbria, in 307 B.C. It was afterwards a municipium, like Bevania, Amerla, and other cities of Umbria, but the modern town is a military station.
Spoletto. In the year 1798 Innocent III. annexed it to the Papal territories. It is now greatly decayed from its former importance, but it is still a bishop’s see and has 2660 inhabitants. The surrounding territory, which is hilly, produces wine, oil, and plenty of fruit. In the neighbourhood of Nocera is a mineral spring, which has been found useful in several complaints.

(Jacobilii, Crónica de Nocera; Negebaur; Moreihini, Saggio medico-chimico sopra l’Acqua di Nocera, Fuglino, 1808.)

NOCHISTLAN. [Mexican States.]

NOCTHORA, M. F. Cuvier’s name for the Dourourocouli, a quadrumanous animal of the New World, with several characters that remind the observer of some of the Lemuridae (the Loris especially) of the ancient continent and its islands. Indeed Dr. Horsfield and Mr. Vigors observe (Zool. Journ., vol. v.) that to the philosophic inquirer ‘it will equally be a Lemur among the Monkeys or a Monkey among the Lemures’.

Humboldt, who first gave a detailed and clear account of this curious form, sees in it, and with good reason, an approximation to the Slow Lemur or Loris parva of the French (Lemur tardigrado of the south of Asia), and the physiognomy and features, particularly the eyes, well justify the comparison. So far it would seem to represent in America the Lemuridae of the Old World; but the teeth are the same with those of the Sajous (Simia apella, caprina, &c., Linn.), according to M. F. Cuvier, who observes, that those cannot be very small and little in the individual examined by him, it was because that individual was a female. The diameter of the small intestines was extremely small, and the oesum simple and only about two inches deep, and sensibly smaller than the stomach.

The organs of motion do not present anything very particular; the four extremities or hands are formed exactly like those of the Sajous, except that the animal does not extend the fingers of the fore-hands, which remain raised as M. F. Cuvier has represented them (see the cuts). The nails are long, narrow, channelled (en gouttières), and a little hooked; the tail is very moveable, but not prehensile, though the animal can turn it over its back, or round its neck or its legs. The pupil of the eye is round, and the eyes themselves are very large and without any accessory organ.

Profile of the Dourourocouli.

Fore-hands of the Dourourocouli.

The external ear is much developed and very like that of the Simia generally. The aperture of the nostrils is not wide. The snout is short and rounded. The fur is soft, thick, and of a milky nature. The interior of the hands presents areas formed of very fine strie, always parallel and ordinarily circumscribed the one within the other. Volar grandis external vulva canum simillimae. Under each axilla a testa.

Colour.—Fur above grey, formed of hairs whose base is black, and which, in the rest of their extent, are annulated with white and black; below, orange from the chin to the vent, the same colour extending upon the sides of the neck. Tail yellowish-grey for three parts of its length, and the rest black. Above the eyes white; three black lines divide the forehead; one springs from between the eyes, the two others arise at the external angle of those organs, and as they ascend are curved towards the first. The inside of the hands and feet is naked and flesh-coloured. The face, naked also, is of a sooty black. The iris is yellowish-brown, and the nails black.

Such are the leading points of M. F. Cuvier’s description of the female which he had under his inspection. He gives the dimensions as following as the measurements of the ears not from the summit of the head to the origin of the tail, 10 inches (French); tail 11 inches; head, from the muzzle to the occiput, 2 inches 3 lines; hand 2 inches; fore-arm 2 inches 9 lines; arm 3 inches; leg 4 inches; and thigh 3 inches 6 lines.

Habits entirely nocturnal. The Dourourocouli spends the day in sleep, folded up with the head hidden between the fore-legs; but as soon as the brightness fades into twilight the animal awakes and selects the eyes, hands, face, and body exposed to the full brilliancy of day, are darkened with excess of light, for the iris is then closed completely, perform their office as the shades of night approach, and the pupil then dilates nearly to the size of the eye.

Humboldt infers from this that in a state of nature, the Dourourocouli hunts small birds, and also, especially, insects: it eats all sorts of vegetables, but is particularly fond of bananas, sugar-cane, the fruit of the palms, the nuts of the Bertholetia [Bertkoeletia], and the seeds of the Mimosa and Cecropia. They do not feed in the daytime, but in the night and at the break of dawn, with a great deal of noise. Their nocturnal cry (mah-mah) resembles that of the Jaguar, and the whites who visit the missions of Oro-nooko call it Titte-Tigre. Its voice is of extraordinary power and volume when considered in relation to its size. Besides the jaguar-like cry it has two others, one a species of mewing (ti-ti), and a very disagreeable sound (quer-quer). Its throat swells when it is irritated, and the animal then resembles in its dilatation and posture a cat attacked by a dog.

Humboldt’s specimen, which he kept for five months, was lethargic during the day, sleeping from nine in the morning to seven at night (whence the species is called Mono Dormitans). Sometimes it would begin to slumber at twilight, and always selected the most shady places, and, like squirrels and weasels, passed readily through small holes and openings. If roused during the day, its large eyes, which at night resembled those of the owl, were lustreless; and when it was roused up in the soundness of its mouth and its teeth might be opened and its eyes glared with impunity. It was very fond of flies, and sometimes would even hunt for them on a dull day, capturing them with great skill. It drank but little, and sometimes passed twenty or thirty days without taking any liquid. It was kept at night in Humboldt’s bedroom, notwithstanding the belief of the natives, that the Dourourocouli will tear out the eyes of sleeping persons. In a state of nature it is generally caught by the natives when sleeping in some hollow tree by day, and the male and female are often taken together.

M. F. Cuvier’s Dourourocouli was very mild in temper, which he attributes to the sex. He fed her on milk, biscuit, and fruit. Humboldt could not familiarise his. M. F. Cuvier observes that the genus of which the Dourourocouli is the type received the name of Aotus because the absence of external ears appeared to be its dominant character. This name, he remarks, can hardly be applicable to the animal now before us.

The affinities of this curious form to the Sajous and the Loris among the Quadrupedos are shown by its fondness for insects, its nocturnal habits, and various parts of its organization. The last-named habits, its cat-like cries and appearance when excited, and other points, indicate its relation to the Fossa. Mr. Swainson notes this affinities to the ferocious quadrupeds, and makes this the genus by which we are conducted from the Cebidae to the Lemuridae. In his ’Classification’ he places the form in the latter group, between Tarsius and Galagothecus.

Geographical Distribution.—South America. Humboldt saw the species in the forests bordering the Casiquiare and
the woods at the base of Mount Duida; also in the vicinity of the cataracts of the Maypures.

Noctua triquetra.

NOCTI'LIO. [Chiroptera, vol. vii, p. 25.] NOCTUA. (Ornithology.) [Owls.]

NODE. The points of a planet's or comet's orbit in which it cuts the ecliptic, and the points in which the orbit of a satellite cuts that of its primary, are called the nodes of such planet, comet, or satellite. Generally the point in which one orbit cuts a second is called the node of the first upon the second.

NODY. [Boonv, vol. v, p. 159; Terns.]

NOETUS, a native of Ephesus or Smyrna, and contemporary with Origen, is chiefly known in ecclesiastical history for the heterodox opinions which he advanced respecting the Trinity. He appears to have believed in only one divine person, and to have denied the distinct and proper personality of the Word and Spirit. He is said by Eusebius to have asserted that the Father was begetten, suffered, and died, and that in reality he was Christ. From this opinion Noetus and his followers were called Patripassians, that is, persons who believed that the Father alone had suffered for the sins of men; but it has been remarked by Beausobre (Hist. de Maniché, p. 533) with considerable truth, 'that this opinion is so absurd and so manifestly contrary to many texts of the New Testament, that it appears scarcely possible that it should be maintained by any reasonable man; which makes him suspect that this was not the opinion of those persons, but a consequence which the orthodox drew from their principles.' Noetus is also said to have maintained that he was Moses and his brother was Aaron; but it is more probable, as Beausobre has remarked, that Noetus and his brother only pretended to defend the unity of God, as it had been taught by Moses and Aaron.

The followers of Noetus probably joined Sabellius, whose explanation of the doctrine of the Trinity was nearly the same as that of Noetus appears to have been.


NOGAYS. The Nogays are a Tartar or Turkish nation, dispersed over the steppes which extend between the lower course of the river Donier and Mount Caucasus. The majority of the tribes belonging to this nation live along the Caucasan line, and find pasture for their herds and cattle in the adjacent steppes. That tribe however to which the name of Nogays is more especially applied has for more than fifty years been settled in the steppe which runs along the northern shores of the sea of Azof, on the banks of the rivers Berda and Molotshina or Moloshina. They have extensive pasture-grounds on the bottoms of the rivers, a circumstance by which they have risen to prosperity, though the better parts of this land have of late been taken from them and given to some German colonists.

It is supposed that the nation settled in these counties at the time of the invasion of the Mongols in the thirteenth century, but some ancient writers, especially Dampier, have left an account of the inhabitants of this race which so distinctly applies to the Nogays that it may be presumed they are the same nation. They lead a wandering life; and their small huts, which are made of felt, are placed upon a carriage and thus removed from one place to another. They have many head of cattle, horses, and sheep: those tribes which live along the Caucasan line also possess camels. They sow wheat and millet in a few places, but pay no further attention to it till harvest time. Their principal food consists of horse flesh and mare's milk. The language of the Nogays is the Turkic dialect, but it is said to differ considerably from that of the Tartars who inhabit the Crimea. (Pallas's Travels thro' the Southern Provinces of the Russian Empire.)

NOGENT, the name of several places. Nogent-sur-Seine, the most important, is situated in the department of Aube. It is situated on the left bank of the Seine, and on the road from Paris to Troyes, 57 miles on a direct line east-south-east of Paris, or 63 miles by the road. It is opposite to an island in the channel of the river; this island is united to the opposite banks by two stone bridges of one arch each. The town is pleasantly situated, well built, clean and tolerably well laid out. There are walks on the banks of the Seine. The town suffered severely in a battle which took place between the allied French and the French in the year 1814. The town hall and several houses were destroyed. There are an hospital, a church, a school, that of St. Lazare, and several other public buildings. The town contains some steeples. The population of the commune in 1826 was 3323; in 1831, 3277; in 1836, 3335. Hosier and coopers are manufactured; and there are several corn-mills on the line.

The river is navigable, and wood, grain, flour, vinegar, wine, charcoal, slates, &c., are shipped from the river to Strassburg by the trade in flour is also carried on with the south of France. There are four fairs in the year. There are a subordinate court of justice and two or three government offices. There are handsome baths on the islands in the river.

The arrondissement comprehends an area of 329 square miles, and contains 85 communes: it is divided into four cantons or districts, each under a justice of the peace. The population in 1811 was 39,213; in 1836, 33,856.

NOIRMOUTIER. [Vendee.]

NOLA, a very ancient and once flourishing town of Campania, is situated in a fertile plain between the Mount Vesuvius on one side and the first ridge of the Apennines on the other. It is 4 miles east of Nola, and 7 miles from the sea. It was described by Polybius (i. 17) and others to have been built or used by the Etruscans, after their conquest of part of Campania, in the second or third century of Rome. Its Etruscan name in the inscription found at Abella in Nolana, and there are there mentioned as having communities and annual sacrifices with Abella, Abellum, &c., Tribula. (Michel, Storia degli Antichi Popoli Italiani, inav.) After the defeat of the Etruscans by the Samnites, Nola is said to have been colonised by the Chalcidans or Cumans, or from the island of Corcyra, by the Brutii (Livy, ii. 161) and Justinus (xx. 1) call Nola a Chalcidian colony. Nola, having joined the Samnites against Rome, was taken by consul C. Juvius Bubuleus, or, according to others, by the dictator P. Fabius (Livy, ii. 141). After this Nola appears to have continued under its magistrates and senate as a municipality and an ally of Rome. In the second Punic war we find the senate of Nola wishing to remain faithful to Rome, whilst the people wished to submit to the gates of Hannibal. Marcellus, the Roman commander, having entered Nola won over Bantius, one of the popular leaders, who informed him of the secret intelligence between his countrymen and the Carthaginians. When Hannibal approached the coast, expecting the gates to be opened to him, he was suddenly issued with his troops from one of three gates, and fell upon the Carthaginians, who were taken by surprise, and obliged to retire with the loss of several thousand men.

This was the first action in which the Romans defeated Hannibal (Livy, xxiii. 16). Nola is mentioned as a Roman
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nology in the Social War, when it was taken by the Samnites, who killed the praetor P. Posthumius. (Liv. Epitome, 73.)

It was afterwards retaken and devastated by Sulla. Augustus, in his last journey into Campania, being taken ill, was carried to Nola, where he died, August 19, A.D. 14.

The present Nola, which is much smaller than the former town, is about one mile in circumference, and has walls and five gates. It is a bishop's see, and has several churches and convents, and some other good buildings, a fine marketplace, a large barrack for cavalry, and about 9000 inhabitants, who, according to the statistics of the sixth century was the first to introduce the use of bells for calling the people to church. In the neighbourhood of Nola a quantity of ancient vases or pottery have been found, which seem to have been made by the inhabitants of the town, but they somewhat resemble the old Etruscan pottery. (Leo Ambrosius, De Nola Opusculum, 1514; Remondini, Storia Ecclesiastica Nolana, 1747; Swinburne; Niebgauer.)

Nola is the head town of one of the five districts into which the utmost part of the cinque terra was divided; his father, Francis, at the census of 1825 contained 117,567 inhabitants. (Poupin, Censimento dei Reali Dominii.)

NOLLE PROSEQUI is a phrase used in proceedings at common law to denote the voluntary withdrawal of the plaintiff from suit out of his own motion, from the further prosecution of his suit, and is derived from the words used in the formal entry of such withdrawal.

It was held that a party entitled to costs under a statute entitled to his costs under, at Eliz. c. 2, § 2. The same mode of proceeding does not exist in courts of equity, but the complainant can at any time discontinue his suit upon an application to the court, and paying the costs of the suit, unless the court shall otherwise direct.

The attorney-general, however, need not originate the proceeding, though originated by private persons, a nolle prosequi may be entered at any stage of the proceedings by the king's attorney-general, but it cannot be done without his concurrence, although the prosecutor desires it. It was held that a defendant is entitled to costs under the statute, if the defendant obtained a kind of nolle prosequi upon an indictment, except upon the application of the prosecutor. Lord Holt says the practice began in the reign of Charles II., and was followed by his brother. If he had obtained a kind of nolle prosequi for that branch of his profession, probably contributed in no small degree to recommend him to those who, accustomed to courtesy and polish of manners in their own circle, were willing to amuse themselves with the oddities of one who had acquired habits of manners so different. However deficient in education, Nollekens was by no means so either in shrewdness or tact: there can therefore be little doubt that people were more diverted than ever by his bluntness and his tact; and his success in forming a very different course, and have become the saddened of the bland. His life, however, had also a great deal of employment in a branch of the art still less favourable than that of bust-making for the display of his higher powers, namely, that of common-place monuments of common-place people, records of persons whom the world did not care to recollect. In such subjects he found only the inspiration that an artist can have, - the actual employment; for pecuniary remuneration; yet there were exceptions even in this case, for the monument to Mrs. Howard of Corby Castle is one of his best productions, pathetic in conception, elegant and tasteful in execution; as a work of art, very far superior to that by him of Captain Townes to draw around, Blair in Westminster Abbey, which, though a sumptuous, is but a frigid and mechanical work. Notwithstanding both his occupations of this kind and his numerous commissions for busts, Nollekens found time to undertake several statues of peculiar merit, among which were few than five Venuses, one of them since known by the name of the Rockingham Venus, and one representing the goddess anointing her hair, which last was reckoned by the artist himself as his masterpiece, and truly informs us of the antique. Among his groups were a Penelope, Arias and a Cupid and Psyche.

While wealth was pouring in upon him year by year, his expenses by no means kept pace with it, nor were they at all extravagant for the leaders of his day. Mary Welch, though of some beauty and accomplishments, was still more remarkable for her rigid economy. So far the match was a very suitable one, for, although wealthy and childless, both the husband and wife carried their notions of frugality even to penury.

After the death of his wife in 1817, Nollekens began to relax a little of that economy which had before prevailed in his establishment; but it was then too late for him to think of beginning to enjoy the wealth which he had accumulated, and which he then discovered only served to draw around him.

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NOMINIALISTS, a sect of the scholastic philosophers, so named on account of the particular tenet by which they were distinguished, namely, the use of the term universals, as a means to the building of another scholastic sect. In order to understand the principal point of difference between these parties, which gave rise to long-continued and acrimonious disputations, it is necessary to advert to the doctrines of the ancient philosophy concerning the nature of universals. Aristotle, after Plato, who is supposed to have been indebted for his opinion to the Pythagorean school, universals, or, as he called them, ideas, by which are to be understood such things as we express by general terms, have, apart from the mere conception of them by the understanding, a permanent and eternal existence in the Mind; and are the patterns or models according to which the individuals of every species are formed, and by which the constitution of each individual is determined. The separate existence of these conceptions denied by Aristotle, who, however, as Plato or the Stoics generally held, had the same meaning with the ideas of Plato—were eternally united to matter; that unconnected with it they have no existence, and that they are inherent in their objects. Zenos, the Stoic, generally maintained that such universal natures altogether; and held that the forms of the Stagirite and the ideas of his predecessor were nothing if distinguished from the notions of them in the mind and the words by which they are designated. The doctrine of Aristotle was universally received among the scholastics, until after the commencement of the eleventh century. But with the revival of dialectic science, which about this time occurred, it began to be warmly controverted. Those who adopted the Stoical doctrine, and affirmed that words or names were universal, were called Realists; those who adopted the Peripatetic opinion, and maintained the proper existence of universals, were termed Nominalists. The honour of forming the sect of the Nominalists is commonly assigned to Roscelin, canon of Compiègne; but its real founder was rather to have been the Sophist, and supposed by Du Boulay, the historian of the Palmarian Academy, to have been chief physician to King Henry I. of France. Be this however as it may, to Roscelin unquestionably belongs the credit of having first raised the sect into eminence. The Nominalist doctrine was highly obnoxious to most of the divines as well as the philosophers of the period, chiefly perhaps, as Brucker supposes (Historia Critica Philosophiae), on account of Roscelin having employed the mystic constitution of the Divine Nature, and thereby laid himself open to the charge of heresy. Notwithstanding the opposition, originating in this source, which it encountered, many converts were made; and its advancement was greatly promoted by the influence of the master of many pupils, the learned Abbot of Moissac, who was one of the disciples of Roscelin. So successful was he in his disputes with William de Champeaux, styled the venerable doctor, who flourished about the beginning of the twelfth century, and was then the principal supporter of Realism, that the pupils of the latter felt it necessary to forsake their master, and became the followers of his more eloquent antagonist. Throughout the whole of the twelfth century the contest between the rival sects continued to be waged. Both parties, by various modifications of their leading tenets, continually changed the nature of the dispute, and brought it into considerable extent among themselves, and a third sect arose, professing to steer a middle course between them, the adherents of which were distinguished by the name of Conceptualists, on account of their holding universality to be the attribute, not of names only, but of concepts. The sect however obtained but a small share of note, and as it seemed to oppose the Realists, both in number and reputation, had the advantage of their opponents, and the erudition and acuteness of Albert the Great, Thomas Aquinas, and afterwards of Duns Scotus, gave them such a decided advantage in the discussion, as to throw the Nominalists completely into the shade.

In the fourteenth century William Occam, an English Franciscan friar, and a pupil of Scotus, became the advocate of Nominalism when it was seemingly about to expire, effected a revival, and brought it into greater celebrity than it had ever before enjoyed. The discussion of the question respecting universals was once more renewed, with the utmost virulence and animosity on both sides. Blows were exchanged when argument was exhausted; and unfrequent debates were terminated by bloodshed. The chief opinion of the Nominalists was soon almost universally received, while Realism, being supposed to be more consistent with the doctrines of the church, and patronized by successive popes, prevailed in Italy and other countries. The controversy long continued, and events felt. Although numbering among its defenders fewer persons of philosophical eminence than were to be found among the leaders of the opposite cause, it still maintained its wonted predominance. John, the twenty-third pope of that illustrious family, who had zealously opposed him on certain matters affecting the privileges of their order, directed severe persecutions against the Nominalists. In the year 1339 the university of Paris published an edict, denouncing the philosophy of Realism, and at the same time one of its rival sects had been hostile to its wider extension. Louis XI. of France, in 1473, likewise issued an edict against the Nominalists, in which it was ordered that their writings should be seized and secured in the libraries of the universities.

The consequence was, that the leaders of the sect fled to England and Germany. In the following year Louis mitigated his edict, which he had issued at the suggestion of the bishops, and commanded the persons concerned to expunge the writings. Thereafter this sect obtained the ascendency in the universities of France, as it had formerly obtained in those of Germany. The Reformation, to which a large train of causes had been effectually conducting, put an end to the controversy long continued, and events felt. Between the two most memorable parties that have ever arisen among the schoolmen, and the contemporary revival of letters eventually gave the death-blow to the scholastic philosophy. Among the most eminent supporters of the nominalist sect, which may be mentioned Suisset, Buridan, Marsilius ab Inghen and Oresmus, in the fourteenth century, and Matthew Cracow, Gabriel Briel, &c., in the fifteenth.

NOMINATIVE. [Case]

NOMUS, a Latin poet, born at Amsterdam in 1738, acquired some distinction by his epic or rather histrionic poem of 'William I., or the Foundation of the Freedom of the Netherlands,' in twenty-four books, 1779. The production contains passages of great force and beauty, but what interest it possesses as a whole it is indebted to the materials themselves. As a dramatic writer, Nomus showed greater talent, especially in his tragedies "Coras," "Zoromter, the Duchess of Coralli," and "Maria van Lalain." The last became extremely popular, and in the possession of the stage for a considerable time, the art of the barque being frequently performed by Madame Wattier-Ziesenis (born at Rotterdam, April 13, 1726, died April 13, 1787), one of the most accomplished women and one of the best singer in the world, though a Solfed and a Solfed was her contemporary.

Besides some other original tragedies, Nomus translated several from the French; among the rest Racine's 'Athalia.' He also produced a comedy which is mentioned with commendation by Van den Ende, large translations, among which that of La Fontaine's 'Fables' is not to be forgotten, display likewise much talent, and charm by a certain happy ease and naturalness and by the merit of style and versification. Like Camaeno, he breathed the life of the times, and was a concise and profound poet.
of his later years was in some measure occasioned by his own want of prudence.

NONAGESIMAL. The nonagesimal degree of the
eclipse is that point of the eclipse which is highest above the
equinox. Every point of the eclipse is therefore the no-
nonagesimal degree.

NONAGÖN. [Polygons, Regular.]

NONCONFORMITY is the term employed to designate
Protestant dissent from the Church of England. It was in
the reign of Edward VI that the English reformed church
first appeared, and it had expected that their new state,
which Henry VIII. it remained in a great measure unsettled,
and was subject to continual variation, according to the caprice
of the king. As organised by Edward, while Calvinistic in its
creed, it was Episcopalian in its government, and re-
tained, together with the hostile attitude of its members,
which had been introduced in the days of Roman Catholic
ascendancy. In the first of these particulars it resembled and
in the last two it differed from the Genevan church. During
the temporary restoration of the Roman Catholic faith under
the administration of Philip and Mary, great numbers of
the persecuted disciples of the reformed faith sought refuge
in France, the Netherlands, Switzerland, and other parts of
the Continent. Of those who fled to Germany, some observ-
ed the law of the land; others, not without warm disputes with their brethren,
who had their commencement at Frankfort, adopted the
Swiss mode of worship, preferring it as more simple, and
more agreeable to Scripture and primitive usage. Those who
were nonconformists in their earlier years, we now call Nonconformists.
The distinction has been permanent, and the name has been
perpetuated. Queen Elizabeth's accession to the throne, in
1558, opened the way for the return of the exiles to the land
of their fathers. It was natural for each of the parties of
which this consisted to have a particular way of worshipping.
It was only with this that they were then engaged; and this
worship to which they had been respectively attached while
abroad; and the controversy, which had been agitated by
them in a foreign country, immediately became a matter
of contention with the great body of Protestants in their
own land. In the month of July, 1559, the Act of Uniformity
was passed, which, while it empowered the queen and her com-
mis sioners to "ordain and publish such further ceremonies and
rites" as might be deemed advisable, forbade, under severe
penalties, the performance of divine worship except as pre-
scribed in the Book of Common Prayer. This act was only
partially carried into effect from the time of its being passed,
in 1558, to 1565. But in 1565 it began to be rigidly en-
forced, and many of the Nonconformists were deprived of
their privileges. (For notwithstanding their sentiments,
most of them had still remained in connection with the
Established Church, being from principle adverse to an entire
separation; many also were committed to prison. The
High Commission Court, tyrannical in its very constitution,
heavily exercised its power. Bishop Beaulieu, the Presi-
dent and at length, in 1593, the parliament declared that all
persons above sixteen years of age who should abstain them-
selves for one month from the parish church should be
banned from the kingdom; and if they returned without
proper cause, they should be imprisoned. These measures,
though directed principally against the Catholics,
affect ed the Protestant Nonconformists with equal severity;
and with reference both to Catholics and Protestants who
departed from the Church of England, were unjustly
impartial. Both among the clergy and the laity they were a nu-
cerous body; and they would have been powerful in
proportion to their numbers, had they only been more closely
united among themselves. A motion, made in 1561, at the
first convocation of the clergy which was held in England,
to do away with the ceremonies and forms to which the
Puritans objected, was lost by a majority of only one, even
though the queen and the pri mate Parker were well
known to be opposed to such a change. In the Com-
m煲ssioii of the Puritans, were strong; and if that
house be supposed, in any adequate degree, to have repre-
sented the people for whom it legislated, their numerical
force throughout the country generally must necessarily
have been great. Without presumption therefore they
should have been able to have had their pacific wishes
listened to, and their grievances redressed. And certainly
it would have been wiser in the government to have endeav-
oured to secure their support than to have awakened their
discontent and provoked their opposition; more especially
if the people of foreign nations from whence we now con-
fronted with; and, generally, that matters commonly recog-
nised as things indifferent should not be insisted on as
indispensable. Doubtless many were less reasonable in their
demands, and injustice and persecution tended much to in-
crease the numbers. In the seventeenth century, the
Professor Courtwright, of Cambridge, desired a change, not
only in the forms of worship, but in church polity also, and
would have substituted Presbyterian in the room of Epis-
copacy. Another party, viz. the Independents, or Brownists,
were going still farther, and were clamouring for a com-
disappearance of the connection between church and state
altogether. Still there is every reason to believe that slight
concession to the demands of the less violent, and the dis-
play of a spirit of forbearance, would have satisfied many,
who would have slayed them. But whilst the Nonconformists
have been the reverse of disagreeable to the country gene-
 rally. Unfortunately an opposite course of policy in this
and subsequent reigns was chosen; which ultimately con-
ducted to the horrors of a civil war. The subversion of
the regal authority, and those disastrous events which make
the history of the seventeenth century one of the most melan-
choly pages of our national annals.

Queen Elizabeth died in 1603, and was succeeded
by James I. of Scotland, and was crowned in London.
She was the member of a Presbyterian church, and had on more
than one occasion expressed his decided attachment to its
principles and worship, the Nonconformists, not without
reason, expected more lenient treatment than they had
formerly received; but this expectation was completely
be distorted. In compliance with their peti-
tions, a conference was indeed appointed and held at Hampt-
on Court, at which nine bishops and as many dignitaries
were present on the one side, and four Puritan ministers,
selected by James, on the other. The king himself pre-
sided and took part in the debate. But no good results
ensued. The Nonconformist representatives were loaded
with insults, and dismissed in such a manner as might well
give birth to the darkest anticipations regarding the fate
of the party to which they belonged. Shortly after, a few
slight alterations of the national rubric were made, and a
proclamation issued requiring the strictest conformity.
In 1604 the book of canons was passed by a convocation,
at Oxford. It was called the Oxford Guilded. By this
act temporal and spiritual penalties against the Puritan divines,
and was followed up by unspiring persecutions. In spite
however of all the means employed for its eradication,
the cause of Nonconformity advanced. In the church itself
there were many clergymen, who, holding the same views
as the Nonconformists, were not regarded as an unimportant faction.

In carrying into execution his designs against Puritanism,
he found an able and zealous assistant in Archbishop Laud, under whose arbitrary administration the proceedings of the Star Chamber and High Commission Court were characterized by great severity. Many Puritans sought for safety and quiet in emigration; and the colony of Massachusetts was founded by this means. But a proclamation by the king put a stop to this self-banishment; and thus even the miserable consolation of expatriation was denied. Hundreds of Puritan clergy were ejected from their curates, on account of their opposition to the Book of Sports, published in 1640, which condemned the previous practices of Calvinism. The adherents of this sect, who adhered to the New Lectionary, were condemned. But a change was approaching. In 1644 Laud was declared guilty of high treason and beheaded; and about five years after, the King was in the same condition. The part which banished Episcopacy and every thing in the Church that was opposed to the model of the Genevan church.

During the Protectorate, Presbyterly continued to be the established religion. Independency however prevailed in the army, and was in high favour with Cromwell. Under his government the sects of the Quakers and Baptists flourished; and other sects, some of which held the wildest and most visionary tenets, sprung into existence. All were tolerated. Episcopacy only was proscribed, and the Nonconformist fiction of prosperity, forgetfulness of the lessons which adversity should have taught them, directed against its adherents severities similar to those of which they themselves had been the objects. The Restoration, in 1660, placed the throne on the heads of his ancestors. Cromwell, by the restitution of the old system of church government and worship. The Act of Uniformity was passed in 1662, by which all who refused to observe the rites as well as subscribe to the doctrines of the Church of England were exposed to severe penalties. The consequence was, the growth of Nonconformist sects, and the severities against Protestant dissenters, and excluded from offices of trust in the state those who refused to receive the eucharist according to the rubric of the Church of England. After this time dissent increased in a very decided degree, with various fortunes, until the reign of William III., when the Toleration Act gave immunity to all Protestant Dissenters, except Socinians, from the penal laws to which they had been subjected by the Stuart dynasty. The benefits contained in the Act were indeed subsequently much abridged by the Occasional Communion Bill, which excluded from civil offices those Nonconformists who, by communion at the altars of the Church, were by the provisions of the Test Act qualified to hold them; and by the Schism Bill, which restricted the work of education to cemented churchmen. After the accession of George I. however, those laws were repealed, and since then, by the removal of the Test Act, and by the passing of the acts relating to registration and marriage, dissenters have been allowed the peaceable enjoyment of the rights of citizens, and be a task of some difficulty to enumerate the various sects which may be classed under the general head of Nonconformists. The chief denominations are the Presbyterians, Independents, Wesleyans, and Calvinistic Methodists, and Quakers. [BAPTIST, DISCIPLES, &C.]

NONES. [KALENDAR.]

NONIUS MARCELLUS, a Roman grammatist, was born at Tiber, in the fourth century. He was the author of a work entitled "Compendiosa Sermonum," which was written for the use of his son, and is chiefly valuable for the quotations which it contains from old Latin writers. This work has been edited by Mercier, Paris, 1614, which edition has been republished in 1782.

NONIUS. [NUNZI.]

NONJURORS. [THEOLOGY.]

NONNUS (Nonno), an inhabitant of Panopolis, in Egypt, lived at the beginning of the fifth century. We have no particulars regarding his life, except that he became a Christian when he was advanced in age. He was the author of two works in Greek, which have come down to us, the "Dionysiacae" and a Paraphrase, in verse, of the Gospel of St. John. The "Dionysiacae" gives an account of the adventures of Dionysus from the time of his birth to the death and resurrection of Christ. The early books also contain, by way of introduction, the history of Europa and Cadmus, the battle of the giants, and numerous other mythological stories. This work, which consists of 38 books, and is written in hexameter verse, has been attributed to Hermogenes of Phrygia, and others, for its inflated style, and has been pronounced to be unworthy of perusal; but it must be admitted that it contains passages of considerable beauty, and supplies us with information on many mythological subjects. The Paraphrase, which was written by Nonnus, is very probable that this work was written before Nonnus became a Christian. The best edition of the "Dionysiacae" is that by Graevos, 2 vols. 8vo, Leipz., 1819-1826. D. Ioneus wrote a dissertation on this author, which was published at Leyden, 1618, with the text of the "Dionysiacae." Six passages from this poem, from the eighth to the thirteenth inclusive, were published by Moser, with a preface by Creuzer. He died 1809. A French translation of the "Dionysiacae" was published at Paris in 1831, and the "Paraphrase of St. John," which is a poor performance, and has been roughly treated by Moser, in his "Aristarchus Sacer," Leyden, 1627, was published for the first time at Venice, in 1561. The best edition of it at present is that of Moser, which was published at Nuremberg, in 1635, and contains 1007 pages. It is remarkable as it contains a few important readings, which have been considered useful by the editors of the Greek Testament. It omits the history of the woman taken in adultery, which we have at the beginning of the eighth chapter. It was condemned by John Calvin, held in contempt by Bellarmine, and many other critics to be an interpolation. In chapter 14, Nonnus appears to have read "abtra third-born" instead of "abtra third-born." (See Griesbach on the passages of Nonnus.)

There are also extant a 'Collection of Histories of Fathers, of which a part only was included in the "Dionysiacae,"' which was written by Nonnus, and is a series of short compositions, called "the Philostratus," and which is ascribed by some critics to the author of the "Dionysiacae." But Bentley, in his "Dissertationes," has given good reasons for believing that it was composed by another individual of the same name. There were several other writers of the name of Nonnus, of whom an account is given in Fabriicus, Bild. Greg. vol. vii., p. 601, 602, ed. Harles.

NONUS (sometimes called Nonus), a Greek physician, and author of a medical work, still extant, entitled Νιακα ξανας ανας ειγες, "Compendium totius Medic. Nothing is known of his life, except that he composed his work at the express command of the emperor Constantine. The work was printed at Venice, 1490. It is composed of a great number of chapters, and is almost entirely compiled from Athanasius Alexiadus, and Paulus Aeginetis; from whom whole sentences are sometimes transcribed with hardly any variation. The greater part of the chapter on Pleurisy (ch. 28) is almost identical with the chapter on Pleurisy in Paulus Aeginetis, "De aegritudine humana," vol. 3, ch. 30, which is preserved in the edition of Athanasius Alexiadus, published by J. S. Bernard, and the author's name is written Nonus. The best and best was edited by J. S. Bernard, and published at his death, in two vols. 8vo, Goth. and Amsterdam, 17—1795, 8vo. and Lat., with copious and learned notes by the editor.
NONSENSE. If a plaintiff, having commenced a civil action at the common law of England, is guilty of any neglect or default, the case was instantly struck by the practice of the court in which it is brought, he is adjudged not to follow or pursue his remedy, and a judgment of non pros or nonsuit, is entered, upon which he becomes the defendant, and in all practicable times to fine the king for his false complaint. This is the general meaning of the term; but according to modern practice it has a more limited signification, the phrase non pros (non prosequitur) being now used to describe the omission of the plaintiff to proceed further; upon which the defendant, the former plaintiff which were formerly comprised under the general term nonsuit. Antiently, when it was the practice for the jury to stand at the bar of the court to hear the evidence on a trial, they withdrew, after the judge had summed up the proofs, to deliberate upon their verdict. On coming back to the bar to deliver their verdict, and before they delivered it, the plaintiff was called in order to ready answer the fine which became due to the king for his false complaint, in case the decision was against him; and if, upon this call, he did not appear, no verdict would be given upon the evidence either for the plaintiff or the defendant, and the former was said to be nonsuited. Hence arose a practice that when the plaintiff perceived that the evidence given was insufficient to support his action, and that the verdict would be unsuited and punished with the law himself, and did not appear when called; the consequence of which was a nonsuit, which was less disadvantageous to him than a verdict for the defendant, as it did not prejudice him for the recovery of the costs of his former action. Further innovation upon the antient proceeding, and it has long been the usual course for the judge to order the plaintiff to be called, or, in other words, to direct a nonsuit, if, upon the whole of the case in support of the action, he is of opinion that there is no evidence upon which the jury would be justified in finding a verdict for the plaintiff. In consonance to the antient practice however, by which the plaintiff might in all cases appear when called to answer for his fine, and so prevent a nonsuit, he cannot at the same time appear and answer some time after, for he may, if he pleases, insist upon the evidence being left to the decision of the jury. It is this practice of calling the plaintiff, when his evidence, as delivered in court, is insufficient to support his action, that the term nonsuit is now restricted. The consequences of a nonsuit, that the jury are discharged from finding a verdict, and the plaintiff pays the costs of the suit; but he is still at liberty to commence a new action against the defendant upon the same cause of action, if he shall afterwards be provided with more complete evidence.

Besides the judgment of nonsuit, the judges of the courts of record at Westminster are authorised by stat. 14. Geo II. c. 17, to give judgment as in case of a nonsuit, where the point in question is one in a case of trespass, to be argued according to the course and practice of the said courts.

NONTRONITE—Silicate of Iron. This mineral occurs in small nodules imbedded in an ore of manganese. Its colour is pale or greenish-yellow. Fracture earthy. Dull.Opaque. Uneous to the touch and very tender. It is found in the department of Dordogne in France, in the arrondissement of Nontron.

Analysis by Berthier.—Silica 44; peroxide of iron, 29; alumina, 19; magnesia, 2; clay, 1 1/2; water, 18 1/2.

NOODT, GEORGE, born at Nimwegen, 1712, died first in his native town, and afterwards at Leyden, Utrecht, and Franeker, where he took his degree in law. He distinguished himself as a jurist, and was made professor of law successively at Franeker, Utrecht, and at Leyden. He studied and taught jurisprudence in an enlightened and philosophical spirit. Averse from dogmatism, he readily acknowledged his ignorance on questions which he could not solve. He was well acquainted with the Roman Jurists, as well as with the laws of the towns of Groningen and of other historians, upon whose model he formed his own Latin style, which is remarkably pure. His chief works are:—1. "Probalibilium Juris Civilis Libri iv.;" 2. "De Jurisdictione et Imperio Liber ii.;" 3. "Ad Legem Aquilam Liber Singularius;" 4. "De Femore et Usurarii Libri ii.;" in which he contends that usury is not contrary to the natural law, and is not forbidden by Divine law. The author traces the history of the Roman law on this subject. 5. "Doctelianus et Maximianus, sive de Transactions et Factione Criminum Liber Singularius," in which he refutes the opinion of some, that a transaction or compromise in capital or felonious crimes, as cases was decided by the Roman Tribunum Liberi Duo, in quibus complexa Juris Civilis alienorumque Veterum Scriptorum Loca aut illustratur aut emendantur;" 7. "De Usufructu Libri ii.;" 8. "De Adjectum Prorsus de Adjectibus et Transactionibus Liber;" 9. "Julius Paulus, sive de Parisiis Expositione. L. 11. Vossi;" which maintains that the Roman laws gave to parents the power of exposing or putting to death their infant children, and that this power was only taken away by the emperors Va-.

NOOTKA SOUND is a large bay on the western shores of the island of Quadra and Vancouver, which is on the coast of North America. An account of this bay is given in his work on Mexico, states that, according to the survey made by the Spaniards Espinoa and Cavall, this bay is not in the large island, but in a smaller one, which is separated from Quadra and Vancouver Island by the narrow strait of Tazin. This bay exhibits two remarkable characteristics: First, it is navigable for seagoing vessels about ten miles inland between 49° 30' and 49° 40' N. lat. and between 127° and 128° W. long., and has a wooded island in its middle. It branches off into several smaller bays or coves, one of which, near Cape Meares, is called Friendly Cove, has a narrow entrance, but makes a safe harbour, being bounded on all sides by high and wooded land. This cove is near the entrance of the bay. The Spaniards formed a small settlement here in 1759; but as their claims to the country were not confirmed by the English, they gave it up to them. The English government maintained this settlement for some years, but at last abandoned it. On the shore of the island the land may be considered as belonging to the Spaniards only during low tide. It presents an alternation of rocky cliffs and sandy beaches; and at the back of the shores there are many detached rocks which are covered with pine-trees. The surface of this low country is very uneven; and at no distance from the sea it is bounded on both sides by ranges of rugged mountains, whose summits are covered with snow. (Voyages of Cook, Dixon, Meares, and Vancouver.)

NORD, a department in the north (as its name implies) of France, stretching along the Belgian frontier. It is bounded on the north-east and east by Belgium, on the south-east by the department of Aisne, on the south and south-west by those of Somme and Pas de Calais, and on the north-west by the German Ocean. Its form is irregular. Its greatest length is from west-north-west (Gravelines on the banks of the Aa) to east-south-east, near the source of the river Petite Helpe, 114 miles; its greatest breadth, at right angles to the length, is from the neighbourhood of Honnecourt to that of Condé, both on the Eure, and is estimated at 175 miles. In size it is rather below the average of the French departments, and is about equal to the two English counties of Stafford and Derby. The population in 1831 was 955,936, in 1836 it was 1,026,467, showing an increase nearly 7 1/2 per cent. It is inhabited by 466 inhabitants to a square mile. In amount and density of population it surpasses the average of the French departments almost in the proportion of three to one, and far exceeds every other department of the north and north-east of France, of which it is surpassed in both these respects. It is rather below our own county of Lancaster in the number of its inhabitants, and the population is scarcely half as dense as in the county of Lille, the capital of the department, is in 40° 37' N. lat. and
3° 4' E. long., 125 miles in a direct line east by north of Paris, or 140 miles by the road through Peronne, Cambrai, and Douay, or by that through Amiens and Arras.

The coast of this department extends from Gravelines, at the mouth of the Aa, 19 or 20 miles in a tolerably straight line east by north to the boundary of France and Belgium. It is skirted by broad sands, which stretch out a mile or a mile and a half from the shore, and by a second line of sands lying a short distance off the coast, which form the sand-banks in the roads of Calais. Dunkerque is the principal port in the department; the mouth of the Aa forms the port of Gravelines, which is however a place of little trade.

The department is generally flat. The hills which form the escarpment westward of the heights of Ardennes, and in which the Escarf and the Sambre have their source, skirt the southern boundary from Avesnes to Cambrai; and a branch from these heights bounds on the west the valley of the Sambre, between Busy and Maubeuge. A line of low sand-hills or downs skirts the coast. The high ground about Cassei, between the valleys of the Lys and the Yser, is remarkable for the view which itcommands: thirty-two towns can be counted, and a part of the ocean, fifteen leagues distant, is in view. The coast is however owing to the general flatness of the surrounding country than to any great elevation of the ground.

The western, or rather north-western side of the department, from the coast to Hazebrook and Bailleul inland, is occupied by the conglomerate formations of Ardenness. The north of Lille is occupied by the same series. The rest of the department, with the exception of a small portion lying east of a line drawn through Bavy and Avesnes, which portion is occupied by the granite and slate rocks, is included in the great chalk district which encircles the Paris basin.

The mineral treasures of the department are considerable, though it affords little metallic ore except iron, which is quarried in Avesnes, Lille, Tournai, and Persan, in the arrondissement of Avesnes, near the eastern extremity of the department, on the Belgian frontier. There are six or eight coal-pits in the Valenciennes coal-field, which is a prolongation of the great coal-field of Belgium. Altogether, in 1839, 423,904 tons were employed in the mining establishments, and 13,205 pit-ridges were connected works; the chief pits are at Anzin or Anzin near Valenciennes. The quantity of coal raised in the department in 1834 was 297,933 English tons, and in 1835, 531,083 tons; a quantity far exceeding that raised in any other department in France.

The principal rivers of the department are the Aa, the Yser, the Escarf, and the Sambre, with their respective tributaries. The Aa has part of its course within the department; it skirts the southwestern border for about 16 or 17 miles, throughout the whole of which distance it has been made navigable. The Yser rises just within the department of Pas de Calais, and continues its course of 35 miles in a north-east direction, into Belgium, after entering which it becomes navigable, and flows into the North Sea at Nieuport. The Yser receives the Peene, a small stream, near the town of Wormhout; it then, after skirting the southern border near the town of St. Venant (Pas de Calais), enters the department, which it crosses in a north-east direction, sometimes within the boundary, sometimes upon it, until it finally quits it to enter Belgium, in which, after a course of many miles, it joins the Escarf. That part of its course which is connected with this department may be estimated at about 35 miles, for the whole of which it has been rendered navigable. It receives on the right bank the Clarence, the Lawe, and the Deule. The Lawe is navigable, and the Deule, which is incorporated in the line of the navigation from the Scarpe to the Yser. The Deule receives the Marque. The Scarpe rises in the department of Pas de Calais, enters this department above Douay, and crosses it in a north-east direction to the border of Belgium, from where it joins the Escarf. Its course in this department is about 26 or 27 miles. It has been made navigable in the upper and the lower part of its course, and these two portions are connected by a line of canal navigation nearly parallel to the river.

The Escarf rises in the department of Aisne, and enters that of Nord a short distance from its source. It runs a winding course of 16 miles, northward to Escaut and Watten; at the point where the navigation commences, the canal of St. Quentin follows the course of the stream, and unites with the navigation at Cambrai. The Escarf receives the Selves on the left bank at Bouchain, the Selles and the Esq of the right bank; between Bertin (Pas de Calais) and Essex, and the Haine on the right bank at Conde. The Honeulle flows into the Haine, and the Hergneau into the Honeulle. None of these tributaries are navigable.

The Sambre rises in the department of Aisne, and entering this at Dunkerque whose mouth is its source, runs 26 miles north-east past Landrecies (where the navigation commences) and Maubeuge into Belgium. It receives at the right bank the Grande Helpe, and the Petite Helpe, neither of which is navigable.

The department has a number of canals. The canal of Bourbourg commences in the Aa, a little above Gravelines, and runs parallel to the coast past the town of Bourbourg as far as Dunkerque. The canal from Dunkerque to Furnes continues the line of navigation into Belgium. Another line, from the Aa to Furnes, is the canal from Bailleul to Peene, which extends from Watten on the Aa to Berge, and the canal of La Basse Coline, which extends from Bergues to Furnes. These two lines of canal are connected by a short canal from Dunkerque to Bergues.

The canal of La Noye commences on the navigation of the Lys, near Aire, and runs east by north until it is joined by a small canal from Hazebrook; the communication is continued by the canal of La Bourre into the navigations of the Lys, and from the last mentioned canals, and the Yser, a canal of considerable length passes by Roubaix.

The canal of the Deule, the most extensive in this part of France, commences in the Lys, between Armentieres and Warneton, and passes by Lille and Haubourdin to the sea of Dunkerque; its whole length is about 40 miles, part of which is in the department of Pas de Calais. It is divided into the Basse or Lower Deule, between the Lys and Lille, and the Haute or Upper Deule, between Lys and Douay. It receives a canal, cut from the Lys at the Brussels, which follows the line of the river Sambre and Scarpe, and the Sambre to the Escarf at Dunkerque near Bouchain.

The canal of St. Quentin, part of which commences in the Lys, between Avenches and Warneton, and passes by Lille and Haubourdin to the sea of Dunkerque; its whole length is about 40 miles, part of which is in the department of Pas de Calais. It is divided into the Basse or Lower Deule, between the Lys and Lille, and the Haute or Upper Deule, between Lys and Douay. It receives a canal, cut from the Lys at the Brussels, which follows the line of the river Sambre and Scarpe, and the Sambre to the Escarf at Dunkerque near Bouchain.
N O R

255

N O R

Canal of Bourbourg

Miles

from Dunkerque to Furnes
9
from of La Haute Colme
15
from of La Basse Colme
9
from Dunkerque to Bergues
5
from La Basse Colme
14
from Hesbayebrook
4
from of La Bourrée
5
from of La Deule
30
from of La Senette
17
from of St. Quentin
16
from of Coude
4
from of the Sambre to the Oise
7
from of Prévost
1

Canal navigation
156

The number of Routes Royales, or government roads, is fifty thousand; 363, of which 4 or 5 miles are unfinished, 34 out of repair, and 325 in good repair. The principal roads are those from Paris by Combray and Douay to Lille, and thence to Ostend; from Paris by Amiens and St. Pol to Hesbayebrook and Dunkerque; from Paris by Amiens to La Haute Colme; and to Boulogne; from Béthune to Calais, and thence to Mons and Brussels. There are other roads from Paris to Lille; one through Amiens and Arras, and another through Amiens, St. Pol, and Bethune. A second road from Paris to Dunkerque runs along the coast through Calais and Gravelines to Dunkerque, by means of a sluice to Valenciennes. A third one runs from the road to Avesnes and Brussels at Mari, and runs by Landrecies and Le Quesnoy. A road runs from Lille to Bauleul and Cassel, and thence to Dunkerque; and another to Tourna and Brussels in Belgium. Roads run from Douay to La Haute Colme (Par de Calais) and to Bouchain; from Cambrai to Valenciennes, to Amiens (Somme), Arras (Par de Calais), and Mézières (Ardennes); from Valenciennes to Tourna and Mons in Belgium; and from Dunkerque to Bergues to Ypres, Menin, Courtray, and Gand, all in Belgium. Of the Routes Départementales, 180 miles were in repair and 27 miles unfinished on January 1, 1837. The bye-roads and pathways had at the same period an aggregate length of about 6300 miles.

Thus abundance of the means of communication is at once the indication and support of the manufacturing industry of the department. Several of the canals have been made since the general peace of 1815. The greater part of them are less than 5 feet deep. The canals and rivers have been called "the arteries of the commerce of France," whereas they are not so much arteries as veins of the economy of these departments. The number of mills has increased from 1831 to 1837. The number of horses has been estimated at one horse to 10 persons. The growth of the latter has suffered much from the rapidity of population, and the number of horses is very considerable, and exceeds the average of the French departments in the proportion of three to one. They are large and strong, and the breeding of them is an important object with the farmers of several parts of the department. The number of water-mills is also very great; they are excellent millers, and the dairy of the department produce much butter and cheese, the former of excellent quality. Bulls and oxen are not so numerous; they are not so commonly employed in agricultural labour as in many other parts.

The growth of wool is considerable, being nearly double the average produce of the French departments. The sheep are chiefly of native breeds, and produce a long and tolerably fine fleece. Pigs are common, and the hogs, which are not so plentiful as in other parts, are generally kept chiefly in the south of the department. The rivers and canals furnish abundance of fish, and the coast-fishery, especially of herrings, is considerable. The woods are altogether sufficient for the supply of the department. Timber-yards are grown along the roads and in the hedgerows or other fences. Coal is generally used as fuel; it is procured partly from the coal-pits of the department, and partly from Belgium.

The superior agriculture of this district is ascribed by M. Dupin to the early emancipation from the parochial system, and its attendant oppressions, to which the peasantry of other parts were subjected. The dukes of Bourgogne, sovereigns of the Low Countries, to which a considerable part of this department belonged, were in general enlightened and generous princes. The country was exempt from its 'states,' by which taxation was regulated and municipalities were established and encouraged. The effect of these immunities is even yet perceptible in the difference that exists in the social condition of the inhabitants of Lille and Douay, which were under the Burgundian sway, and those of Cambrai and Avesnes. The former are distinguished by small compact farms (for the peasantry are mostly occupiers of large farms), few falows, and abundant and varied crops: in the latter, farms are larger, falls more frequent, crops less varied and less abundant. The peasantry of the former are a quiet steady people, obedient to the laws, little given to change, and distinguished by their moral deportment. Few suffer from the object poverty, except the aged and the sick. They usually combine the industry of small farmers with their agricultural pursuits; and the spare time of the farmer and his wife and children is employed in spinning, linen-weaving, flax-dressing, lace-making, or the manufacture of tobacco: the latter is a flourishing pursuit.

The department is divided into seven arrondissements, as follows:—

<table>
<thead>
<tr>
<th>Name</th>
<th>Situation. Miles</th>
<th>Pop. 1831</th>
<th>Pop. 1836</th>
<th>Communes</th>
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</thead>
<tbody>
<tr>
<td>Lille</td>
<td>Central 338</td>
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<td>309,349</td>
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<tr>
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<td>Central 183</td>
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<td>94,573</td>
<td>67</td>
</tr>
<tr>
<td>Dunkerque</td>
<td>W. 279</td>
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<td>96,586</td>
<td>60</td>
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<td>Hesbayebrook</td>
<td>Central 268</td>
<td>104,007</td>
<td>108,859</td>
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</tr>
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<td>E. 341</td>
<td>123,357</td>
<td>123,661</td>
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</tr>
<tr>
<td>Cambrai</td>
<td>S. 346</td>
<td>124,344</td>
<td>157,562</td>
<td>117</td>
</tr>
<tr>
<td>Valenciennes</td>
<td>Central 244</td>
<td>123,752</td>
<td>130,061</td>
<td>80</td>
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</tbody>
</table>

1999 989,938 1,026,407 660

Night-soil and lime are principally employed for manure. Gypsum would be used but for the heavy cost of conveyance from Paris, where the nearest quarries are situated.

The grass-lands are extensive, and the cattle are large and fat. The produce of beef, which is sent to Paris in quantities. The average depth of the soil is 152 cm, and the product of potatoes, which is sent to Paris in quantities.
The number of cantons, or districts under a justice of the peace, is sixty.

In the arrondissement of Lille are—Lille (pop. in 1826, 69,860; in 1831, 69,673; and in 1836, 72,005), and Hau- bourdin, on the canal of the Deule; La Bassée, on the canal (pop. in 1826, 2563; in 1831, 2600; in the town, 6338 for the whole commune); Warneton and Comines, on the Lyons; Tourcoing (pop. 8094 town, 17,973 commune); Roubaix (pop. 12,443 town, 18,187 commune); Lannoy, and Sédan, near Lille. Of some of these above places, there are small factories: [a list here]; Lille, Roubaix, Tourcoing. Hau-bourdin is a small place, with a population of 1000 in the town itself, or 2151 in the whole commune. La Bassée was formerly a fortress of considerable strength, but is now an open town. The inhabi- tants are chiefly engaged in the manufacture of iron goods and nails, and there is a government manufac- tory of fire-arms. There are coal-pits and slate and marble quarries in the neighbourhood. La Quessoy (pop. 319) is a small town, and there are several hosiery works. Louis XIV. founded an extensive military hospital here. Bayav (pop. 1633) was Bagaceum, the chief town of the Nervii. Under the Roman dominion it was a town of importance, being at the convergence of several roads, and being crossed by the alluvial soils of the river. Some of the towns are: Solre-le-Château (pop. 2103 town, 2477 commune) manufac- tures lace and leather, and trades in wool and flax.

In the arrondissement of Cambray are—Cambray (pop. in 1826, 17,031; in 1831, 14,510 for the town, or 17,466 for the commune; and in 1836, 17,648) and Honnecourt, on the Escut; Le Cateau or Château Cambrésis (pop. 3041 town, 5946 commune), on the Selle; and Solesmes, between the Selle and the Ecaillon. [Cambray; Cateau, Le. The inhabitants of Solesmes manufacture soap, starch, and leather.

The population, which is not otherwise specified, is that of the whole commune, and according to the census of 1831.

The manufactures of this department are varied and im- portant. The export is to England, and the imports are woollen yarn, and the manufacture of bleached and un- bleached linens of various degrees of fineness, of printed cottons, and other cottons, of handkerchiefs, cotton velvets, kid- ticking, table cloths, and woollen cloths, are carried on with success. There are also important cotton factories, in which linen, woollen, and cotton are manufactured. Distilleries of corn spirit, refining-houses for sugar and salt, breweries, dye-houses and bleach-grounds, iron-works, glass-houses for bottle and window glass, paper-mills, brick-yards, rep- licants, tanneries, tallow and soap factories, and saw-mills are numerous. The manufacture of beet-root sugar is also extensively carried on, and there are government establish- ments for casting cannon, making small-arms, refining salt, and manufacturing snuff.

The department contains 65 parishes. The diocese of Cambray or Cambrai, the bishop of which is a suffragan of the arch- bishop of Paris. It is in the jurisdiction of the ceur Royal of Douay, and in the circuit of the Academic Uni- versities of France. The diocesan authority was in the person of the bishop of the county, the head-quarters of which are at Lille. It has the fortresses of Gravelines, Dunkerque, Lille, Douay, Cam- bray, Valenciennes, Conde, Maubeuge, and Avesnes. It returns twelve members to the Chamber of Deputies.

The department contains also the districts of the French departments, but by no means equal to those of the east part of France. The number of young men enrolled in the military census of 1828-9 who could read and write was 45 in every 100, the average of France being under 40. The department however holds a high rank in the scale of intellec- tual culture among the educated classes: it is pre-em- nent for the number of its learned societies. Lille has a Royal Society of Science; Douay, a Royal and Central Society of Agriculture, Science, and Art, a Society of the Friends of Industry; a Society of the Friends of the Arts, and a Society of Medicine, Surgery, and Pharmacy; and Cambray has a Society of Emulation. There were in 1826, a Collège Royale, with about 300 students; 13 commercial high schools, with about 1500 students; 4 private schools, and a large school of old age and infirm persons, for boys, with above 600 scholars; and fifty-three girls' boarding- schools, with about 3000 scholars. There were also 14 schools under the direction of the Frères de la Doctrine, and 12 schools of the Jesuits; 12 schools of the society of Jesus, with 1200 scholars; and 17 other schools, with 62,000 scholars: making a total of 1237 institutions of all kinds for educational purposes; with upwards of 72,000 persons under instruction.

The press is very active: fifteen newspapers or other periodicals are published in the department, viz. four at Lille, three at Dunkerque, two each at Douay, Cambrai, and Valenciennes, one at Hauzebrouck, and one at Avesnes; besides which 230 works on morals, sciences, and literature are published on the average yearly.
There are in the department 46 almshouses or hospitals, with yearly subsidies or receipts amounting to 3,500,000 francs or 54,000l., which provide for 900 sick persons, 2860 old people, and 1440 orphans. A sum of 273,000 francs, or about 11,000l., is set apart yearly from the revenue of the department for the maintenance of about 10,000 orphans, besides 1,000,000 francs, or 40,000l., to support above 600 bureaux de bienfaisance, or ‘charity houses,’ which afford relief to 150,000 persons. It may be observed however that the large proportion of persons receiving aids or relief (nearly to the amount of one sixth of the whole population) furnishes a considerable drawback to the pictures which our authorities draw of the prosperity of the department.

The department was antiintely included in the territory of the Morini, the Atrabates, and the Nervii, all Belgian nations. The seat of the division between the Lyas and the Ecaut; and the Nervii east and north of the Atrabates. In the Roman division of the Gallic provinces these nations were all included in Belgica Secunda. There were several Gallic systems on part was comprehended in the counties of Flanders, another in that of Hainaut (both established in the ninth century), and another part in Le Cambrésis, or territory of Cambray. These counties of Flanders and Hainaut, having come into the hands of the dukes of Burgundy, were annexed to the French crown, and formed a part of the French branch of the House of Austria, which also acquired possession of Le Cambrésis. The districts included in this department were conquered by Louis XIV., and formed by him into the military government or province of Lille. The towns of Flanders, however, remained the capital. This country was the scene of the later campaigns of the Duke of Marlborough and Prince Eugen, who took Lillo (a.d. 1708), Douay (a.d. 1710), and Bouchain (a.d. 1711), after forcing the lines which the French had constructed to cover the latter. After the accession of the English from active participation in hostilities (a.d. 1712), Prince Eugen with the other allies took Le Quesnoy and besieged Landrecies; but Marshal Villars, the French general, having gained a victory at Denain, was joined by Villars, who had taken Marnix, and obliged Eugen to raise the siege. Villars then retook Douay, Le Quesnoy, and Bouchain; hostilities were however soon brought to an end. In the campaigns of 1733 the department was again the scene of much action. The storming of Condé, and Le Quesnoy were taken by the allies; and Dunkerque, Cambray, and Bouchain were besieged or menaced, but in vain. In the campaign of 1734 the allies besieged and took Landrecies; and threatened Cambray, Douay, and Dunkerque. The allies attacked the town of Flanders, which had been strengthened by the English. The allies, however, were driven from the field, and the campaign concluded with the settlement of peace.

NORDBERG, GEORGE, born at Stockholm in 1677, studied at Upsala, took holy orders, and in 1703 was appointed almoner to the Swedish army under Charles XII., then at Thorn in Prussia. He followed Charles XII. into Poland, Saxony, and Russia, and in 1687 was made chaplain to the king. Being made prisoner by the Russians at Pulsko in 1709, he was sentenced to death, and was sent to Siberia, where he was distinguished by his liberality, and was frequently commended by Queen Ulrica Eleonora to write his history under her own inspection, and the MS. was afterwards submitted to the revision of a royal commission. The work was published at Stockholm in 1740, 2 vols. fol., and translated from the Swedish into French, and published at the Hague, 'Histoire de Charles XII.,' par M. de nordberg 3 vols. 4to., 1742. The documents from which Nordberg compiled his history are authentic, and he had himself witnessed many of the facts which he relates, and which he has noted down in his diary. His work is therefore a book of authority. The style however is heavy and diffuse. Nordberg speaks slightly of Voltaire's 'History of Charles XII.,' which is written in a more amusing style, but is inferior to the work of Nordberg in point of correctness. Nordberg died at Stockholm, in 1744.

NORDEN, FREDERIK LOUIS, born at Glückstadt, in Holstein, in 1708, was educated for the navy, and entered the naval school of cadets at Copenhagen. He made considerable progress in mathematics, and was appointed imperial draughtsman. In 1732 he obtained the rank of lieutenant in the Danish navy; and soon after, King Christian VI., having been made acquainted with his abilities in drawing, gave him permission to travel abroad for his improvement as a painter for the purpose of Norden went to Italy, where he spent about three years, after which he was commissioned by the king to proceed to Egypt for the purpose of examining the ancient monuments of that country. He arrived in Egypt in July, 1737; and after a visit to Alexandria, he took up his residence in the Nile as far as Derr in Nubia, after which he retraced his steps towards Alexandria, where he reembarked for Europe, in May, 1738. On his return to Copenhagen he was well received by the king, and was made captain of the navy. In 1740 he proceeded to Stockholm, where he served as a volunteer in the war against Spain. He sailed with an English squadron for South America, and returned to England in the autumn of 1741. On being made a member of the Royal Society of London he published a work on Egyptian monuments and other remains of antiquity at Thebes. He died at Paris, in September, 1742. His papers and drawings concerning Egypt were arranged by his friends and published in French, 'Voyage d'Egypte et de Nubie,' 4 vols., Copenhagen, 1754. On these papers, the statue of the Nile as far as Cairo to Derr, and a succession of views of the scenery along the banks of the river, forming a kind of panorama of the Nile; besides plans and sections of the pyramids, temples, and other remarkable buildings. The second volume contains Norden's journal, which is written in a plain unpretending style. The editors have added a biographical notice of the author. Norden was the first traveller who explored Egypt as an artist, and his drawings form a model collection of the stupendous monuments of that country. His work was translated into English, and published in London, in 2 vols. fol. Langlies published a new edition of the original French, in 3 vols. 4to., Paris, 1755-6, with corrections.

NORDHAUSEN, a Prussian town in the government of Erfurt, in the province of Saxony, is in 51° 30' N. lat. and 10° 50' E. long., on the south side of the Harz mountains, on the little river Zerze, and at the junction of the counties of Buckow and Altenau, that is, in the golden valley. It is an old-fashioned place, surrounded with walls and towers, and has seven gates. From the year 1230 till 1602, when it was united to the Prussian dominions, it was a free imperial city. It is built partly in the plain and on the declivity of a hill, and consists of the upper and lower towns. There are seven Lutheran churches, a gymnasiun, some very well conducted girls' schools, an orphan asylum, three hospitals, and other useful institutions.
The inhabitants, 11,000 in number, manufacture very great quantities of woollen cloths, flannels, and laceder ware; they likewise make vitriol, aquafortis, and cream of tartar; the breweries are very extensive, and the distilleries produce annually, according to Cannibich, 70,000 cwt. of rape oil and 2,000,000 oil cakes. The tanneries are likewise important. The inhabitants derive great profits by fattening oxen and swine, numbering about (60,000 oxen and 30,000 swine) are exported. Besides the profitable export trade in the above articles, the trade in corn is very great, so that on the whole Northumber-land is a flourishing town. It is said that a tribe of gypsies are still living nearly for the savage state in the vicinity of Wansbeck; Northumber-land. For-tamin's Urbändische Geschichte der Stadt Nordhausen; Müller's Handbuch, 4 vols. 8vo, 1836. This latter is a topographical dictionary of the Prussian dominion, which is always used in this work as authority for places in Prussia, being a book of official character.

NORLAND. [Trondheim.]

NORDLINGEN. [Schleswig.]

NORDSTRAND. [Schleswig.]

NOT. [Thames.]

NORFOLK, a maritime county of England, on the eastern coast. It is bounded on the south-east and south by Suffolk, from which it is separated in one part by the river Waveney, and in another part by the Little Ouse; on the south-west it is bounded by the county of Berkshire and for a short distance on the west by Lincolnshire; on the north-west it is bounded by the Wash, which separates it from Lincolnshire; and on all other sides by the North Sea or German Ocean. Its form approximates to an oval, and is 53 miles long, and 42 miles broad. The area is estimated at 1,384 square miles. The population in 1821 was 344,368; in 1831, 390,054, showing an increase in ten years of 45,686, or 13 per cent., and giving 193 inhabitants to a square mile. In area it is the fourth of English counties, being exceeded only by Yorkshire, Lincolnshire, and Devonshire; in amount of population the ninth; and in density of population the twenty-sixth. Norwich, the capital, is on the river Wensum, about 97 miles in a direct line north-east of London; 115 miles by the mail-road through Bishop's Stortford, Newmarket, Bury, Thetford, and Attleburgh, or 113 miles by the other mail-road through Chelmsford, Colchester, and Ipswich.

Coast-line. Harbours. Geology. The Norfolk coast comprises the eastern shore of the Yare, and on the south is washed by the Wash with a convex outline to the Wash. It is liable to continual encroachments from the sea, which, especially about Cromer, has gained much on it. It is for the most part low. Between Happisburgh (which is near North Walsham) and Weybourne, the coast is elevated, and the town of Cromer is called "Mad Cliffs," formed of diluvial matter, especially clay, with large masses of imbedded chalk. These cliffs rise in one part to the height of 60 or 60 feet (Mr. R. Taylor, in Philos. Mag. for 1824), but are generally much lower. Between the mouth of the Yare and the commencement of the cliffs is a low sandy coast skirted by sand-banks. The channel between these banks and the shore is known as Yarmouth Roads, and constitutes a safe anchorage, in some places of 10, 12, or 13 fathoms. In time of war, this roadstead is the usual rendezvous of the North Sea vessels. It is frequented by the northern colliers in their way southward. West of the cliffs a low sandy or shingly coast succeeds, extending to St. Edmund's Point, at the entrance of the Wash into the sea, his coast and the cliffs of sand-hills, or as they are locally termed "meals," or "maram hills," from the marum or marram (Arundo arenaria) which grows on them. Some of these "meals" are insulated at high-water. The sands by which Brancaster Bay in this part of the coast, is divided from the sea, render it fully liable to real inundation, with a depth in some parts of 16 or 18 fathoms. At Hunstanton, near St. Edmund's Point, are cliffs nearly 80 feet high. The Wash is an estuary, having extensive sand-banks dry at low-water, with channels of deeper water between them, and leading the Nene. At the river Weymouth a pool, by which the Nene flows into the Wash, the Nepean, and deep water off the Norfolk coast is known as Lynn Well or Lynn Deeps. The coast on the Norfolk side of the Wash is low and marshy. There are a number of creeks and harbours on the Norfolk coast:—Yarmouth, Cley and Blakeney, Wells, Burnham, Brancaster, Thornham, Hemsby, Seton- ham, and Lynn.

Surface and Geology. Character. Norfolk contains as hills. The rivers flow through valleys of varying breadth, skirted by low rising grounds or uplands. The highest ground in the county is probably on the north-west side, where the chalk downs appear, extending north and west from near King's Lynn to Swaffham, where they sink beneath the marshy valley of the Nar, from which they again emerge and extend to Downham. This high ground subsides gradually to the adjoining swamps of the Wash, and the beds of diluvium (or alluvium, for our authorities are not agreed) which overlie a large portion of the county and the adjacent county of Suffolk; but on the west, toward the mouth of the Wash, the chalk has a more interior and green-sand crop out from beneath it; and beds of saline character to those of the Weald in the south-east part of England crop out from beneath these formations. The western part of the county is included in the great Fen that has been hollowed out by the sea, and the part of "Foulness" near that town has evidently been the site of a further extension of the chalk towards the west, through the northern part of Cambridgeshire. The navigation of this coast so dangerous are formed of aggre-gated masses of ponderous chalk flints. This chalk is in some places dug for lime; and at Marsham, west of Swaff- ham, are the remains of the chalk which is so extremely hard and dense to be used for building. Among the most curious fossils of the chalk are the flints called by Professor Buckland "Paramoudrons," they are common about three feet long, near-shaped, and are found with the smaller and more usual flints, and at the coast, beach, and river-cliffs. The beds of diluvium vary in their character. In the eastern part of the Wash and the Fen region they are of gravel, sand, and clay, embodying in many places fragments of chalk, and containing a substratum of fossil shells, several feet in thickness, called "eagre-shells." The chalk is the "Mad Cliffs," and other characters to the existing species of the neighbouring shores, while others belong to extinct species. Beds of alluvial gravel are found on the sides of the valleys which intersect this district. At Norwich and to the north and west of the city thick beds of sand and gravel are found resting in the chalk, with patches of alluvial clay and brick-earth interspersed. In the western parts of the diluvial district the granules are large blocks or boulders of grey or greenish sandstone, dis- members, and by their planer surfaces, called "Chalk" or marl which rests upon the chalk. This side of the county is however chiefly distinguished by sandy beds. The Suffolk word "eagre," meaning gravel, has been adapted into geological science, and applied to beds of hard sand and gravel, which form the reddish cliffs eastward of the diluvium of this and the adjoining counties.

Chalk is dug for lime in many places; excellent sand for glass-making is procured between Settenham and Castle Rising; some potters'-earth is found and excellent breast- earth; marl is dug in the valleys of the Bure, and in the Fen districts of the west furnishing fuel for manure.

Hydrography. Probable Changes of the Coast in Past Centuries. The principal streams flow from the north-west part of the county, where the chalk occupies the surface. The Yare rises at Sheringham, and at East Dereham, and flows southward to the Wash, being joined by the Waveney at the mouth of that river, 25 miles below Whitstable, and at the mouth of the river Bure. The Yare rises at Sheringham, and 12 miles by the Yare and at East Dereham, and flows eastward to the junction of the Wash and the Waveney. The second stream, which supplies the name of Wens- som, and others of Yare, flows first towards the south-east and then towards the north-east 20 miles, till it expands into a large and fertile district called the neighbour- hood of Fakenham, and after making a most perfect turn that town, flows south-east in a winding channel 45 miles to Norwich, 2 miles below which it joins the Yare. The Yare rises at Sheringham, and at East Dereham, and flows south-east into the Wash, being joined by the Waveney at the mouth of that river, 25 miles below Whitstable, and at the mouth of the river Bure. The Yare rises at Sheringham, and 12 miles by the Yare and at East Dereham, and flows eastward to the junction of the Wash and the Waveney. The third stream, which supplies the name of Wensom, and others of Yare, flows first towards the south-east and then towards the north-east 20 miles, till it expands into a large and fertile district called the neighbour- hood of Fakenham, and after making a most perfect turn that town, flows south-east in a winding channel 45 miles to Norwich, 2 miles below which it joins the Yare. The Yare rises at Sheringham, and at East Dereham, and flows eastward to the junction of the Wash and the Waveney. The fourth stream, which supplies the name of Wensom, and others of Yare, flows first towards the south-east and then towards the north-east 20 miles, till it expands into a large and fertile district called the neighbour- hood of Fakenham, and after making a most perfect turn that town, flows south-east in a winding channel 45 miles to Norwich, 2 miles below which it joins the Yare. The Yare rises at Sheringham, and at East Dereham, and flows eastward to the junction of the Wash and the Waveney.
and flows first eastward and then north-eastward, past Diss, Harleston, Bungay, and Beccles, to its junction with the Yare, nearly 50 miles. The Bure rises in the northern part of the county, at Melton Constable, between Foulsham and Holt, and flows south-east past Aylsham 50 miles, to its junction with the Eastern Yare, at that point of the watercourse, which receives several small tributary streams: the Tey joins the Yare near Norwich; and the Thurn, from the neighbourhood of North Walsham, joins the Bure.

In the lower part of their course, the Yare, Waveney, and Bure, become more sluggish through the broads and marshy expanses, in which are considerable pools of water, locally designated 'broads' and 'meers.' The valley of the Bure, united with some adjacent vales, forms a wide tract of low land, interspersed with some isolated spots of higher ground, such as Herringfleet, Levington, and the 'Priory waste,' but has comparatively less of the broads than any other part of the county. Some of these are of considerable extent, as Filby Broad and Rollesby Broad, forming a winding sheet of water 3 miles long; Hickling Broad, 18 miles long and as much broad, and others. One arm of the Thurn passes through this lowland tract to the sea near Winterton Ness.

The streams of the western side of the county belong chiefly to the system of the Ouse, which touches the border of the county at Little Yarmouth, near Blyth, and flows northward 22 miles into the Wash between Lowestoft and Glandis. The Yare flows up to Denver near Downham, where it is arrested by sluices; it formerly flowed up much higher. This river is subject to a great swell or overflowing at the equinoxes, rendering the passage of vessels in the river perilous. The Yare and Bure receive the Little Ouse, the Wissey, and the Nar. The Little Ouse rises at Lopham, in the same tract of swampy ground as the Waveney: it flows west to Thetford, where it receives the Thet from near Hingham, 22 miles long. It is then divided into two branches, a western, another; the latter passes through the valley of the Bure, and Ellingham, in the valley of the Waveney, were smaller islands. The entrances of the intervening estuary appear to have been at Horsea Gap, between Caister and Happisburgh, at Yarmouth (where the opening extended, it was 5 miles broad), and Great Yarmouth, near Lowestoft. (Robberds, ut supra.) An ancient map, a copy of which is preserved by the corporation of Yarmouth, corroborates in a great degree the above supposition (Ives's Remarks on the Gastronomy of the Channel; and Norwich in ancient documents is described as a port.

Navigation and other Communications.—The Wensum and Yare are navigable to Norwich for sea-borne vessels. Norwich was accessible to ships of burden centuries ago, as ancient records and historical incidents prove. The southern entrance of the Yare at that time, through what has since been called Lake Lothing, was much used by shipping: but a bar of shingle and sand accumulated at the mouth of it, and this was crowned (a.d. 1712) with an artificial bank to prevent the inundation of the marshes. The only navigable entrance to the Yare for centuries after the accumulation of the bar at Lake Lothing was by Yarmouth, where sea-borne vessels discharged their cargoes; and the communication with Norwich was carried on by river-craft. In 1827 an act was obtained for making the Yare and Wensum navigable for vessels drawing 10 feet water, and for making a cut from the Yare to the Waveney, and from the Waveney to the sea through Lake Lothing, thus restoring the ancient entrance, and making Norwich once more a port. The tide or sea level of this navigation will admit vessels of 84 feet long and of 21 feet in the beam. These works have been completed. The Waveney is now navigable to Beccles for small sea-borne vessels; and to Bungay, a few miles higher up, for river-craft.

The Bure is navigable up to Yarmouth, 40 miles from the sea at Yarmouth. The Ant, a feeder of the Bure, is navigable up to Wayford Bridge, and the navigation is continued by a canal up to North Walsham. The Thurn is marked on Staceley's 'Map of Inland Navigation' as navigable up to Hickling Broad.

The Greater Ouse and the Nene are navigable throughout that part of their course which is within this county. The communication between them, by means of the Waseby canal and the Well creek, is close on the western side of the county. The Little Ouse is navigable up to Thetford; to Wissey, or Stoke, up to Stoke Ferry; and the Nar up to Castle Acre.

The Norwich mail-coach road through Ipswich enters the county at Scole on the Waveney, and runs by Long Stratton.
to Norwich: that through Newmarket enters the county at Thetford, and runs by Attleburgh. The mail-coach road to Lynn and Witham enters the county about 9 miles beyond Elly, and runs by Downham, Lynn, Snaitisham, and Burnham. Another road to Wells enters the county just beyond Brandon in Suffolk, and runs by Swaffham, Fakenham, and Great Walsingham. The road to Cromer branches off from this beyond Brandon, and runs to Winterton, East Dereham, and Reepham. One road to Yarmouth branches off from the Norwich and Ipswich road at Scole, and follows the valley of the Waveney by Harleston, Bungay (Suffolk), and Hadston: but the mail-coach road does not enter the county until near Yarmouth.

The Eastern Counties Railroad is to run to Norwich nearly in the direction of the Ipswich and Norwich mail-road, and from thence to be continued in an easterly direction to Yarmouth.

Agriculture.—Norfolk has long been considered as foremost among the English counties in an agricultural point of view. The same causes which have made the Netherlands productive, beyond the natural capacity of the soil, have brought about similar effects in Norfolk, where improved systems of cultivation have been adopted by imitating the Flemings, with whom a direct intercourse has always been kept up from the eastern ports of England. The climate of Norfolk is somewhat colder than that of the western counties of England. The east is exposed to the north-east winds, and the whole of the county is nearly a continued plain, with only slight undulations of the surface. Except in a small portion of the county on its western boundary, and on a strip along the south coast which is marshy, the air is dry and healthy. It is, on the whole, as favourable to the tillage of the land and the growth of corn as any part of England.

The soil may be divided into three classes: light sands of various qualities, chiefly in the north-western part of the county; loam, clay, or loamy clay, on the borders of Lincolnshire and Cambridgeshire, and loams of various qualities, chiefly light, on the coast. There is a strip of marsh along the southern boundary, where the Wash and the Waveney take their rise, and with a very slow current, the one towards the west, where it discharges itself into the Wash, and the other eastward to the sea at Yarmouth. At Lophamford, where there was formerly a gate dividing Norfolk from Suffolk, the Wash runs to right and left of the road: and from this point, which is low in appearance, the two rivers begin to flow. The fall from this point to the sea, on both sides, is very trifling, and the whole course lies in areas.

The district in which the true Norfolk system of cultivation was first adopted, and where turnips and clover were introduced in the regular rotations, was that on the north-west, where the better kinds of sand prevail. From this district it gradually spread; and rotations which are now regular in Norfolk which are considered too heavy to bear turnips, especially after having been well underdrained—a practice which evidently arose from the desire of raising turnips to feed cattle and sheep, and manure the land.

It is now more than a century since the system of cultivation which bears its name has been almost universally adopted in this county. It was the necessary consequence of the introduction of turnips in the place of the old fallow; and has only been modified by substituting artificial grasses, peas, beans, and clover, the latter, as usual, succeeding when too often repeated on the same land. In the regular course of turnips, barley, clover, and wheat, only one-fourth of the land is in wheat; but in very good loams, and where manuring is abundant, it may appear at the same time as the screens of four years, by introducing peas or beans after the first rotation, and taking a crop of wheat after them. Thus the rotation becomes one of six years, viz. turnips, barley, clover, wheat, beans, and manure the land. There is another advance made by the clergy of Norfolk. Every six years, manure the land and reap manure. These circumstances have at least accounted for all the deviations from the original four years' rotation.

Norfolk was for many years far before other counties, north or south of it, in its agriculture; but for thirty or forty years little or no progress was made; and the Norfolk Inquiry, introduced into the north of England and other parts of Scotland, speedily produced measures to check the progress which it originated. Turnips, having been originally introduced from Flanders and Holland, still continue to be grown; but, as they are there. The raising them on larger scale has, however, been frustrated by the fact that their culture is so much less profitable than that of the chief crop and the improvement of the soil, is only adopted by gentlemen and those farmers who have risen above the prejudices attached to a long established practice. Although the drilling and dibbling (Aridable Land, vol. ii. p. 226) of turnips has been almost universally adopted, yet the results are still growing irregularly at various distances, a circumstance which precludes the use of the plough in the intervals, and restricts the cultivation to that of the hoe. Hence Norfolk does not in general produce such heavy crops of turnips as in similar soils in Northumberland.

The crop which is raised in the greatest perfection in Norfolk is barley. It may be considered as the most important portion of its agricultural produce; and where these have been folded on turnips and the surface is enriched and improved, then, and only then, does it appear that true ploughing makes a perfect preparation for the seed. The old practice in Norfolk was to work the land by ploughing it three or four times for barley after turnips and for wheat after clover. It is true, however, this has been changed, as it may be seen in some parts of that county. Young justly condemns this practice as light porous soil. Since that time a better practice has been introduced, and much useless ploughing has been omitted. On the heavy loams repeated ploughing would be unnecessary, even when winter crops are grown, and when the land has been wet for a considerable time, as it is likely to pulverise a heavy soil, than to watch an opportunity and plough it at the right time, when the soil is sown almost entirely with the barleys, but it is drilled and hoed in the autumn. When the soil is very rich, the object is to sow clover, after a shower, as soon as the bare appears above ground, and so slightly roll the surface.

There are few counties where such an extent of poor productive land has not been brought into cultivation but made equal in fertility with that of the best natural land, as in Norfolk. This has been effected chiefly by laying considerable portions of the marshy clay, found below the surface, on the poorer soil which was at the surface, and by an excellent practice. The land and subsoil is impervious to water. The drainage takes place winter, when labour is cheap, in a very simple manner: the inclination of the soil being ascertained, and the ditches deepened so as to carry off the superfluous water, after which this soil is retained by the main-drain, and the land is by the same means kept in a sound dry state. However impervious the subsoil, drainage may be obtained at all times. This drainage is very different from that of draining of springy or marshy soils, and requires a different system from that which is practised in the eastern counties; it is by burning, and by ploughing the land, which is recommended to give an outlet for the superfluous water which falls on the surface in a rainy climate. The only thing to be attended to, is to proportion the distance of the drains to the nature of the soil with respect to porosity, and to the quantity of rain which usually falls in autumn and winter. A light porous soil of some depth might be much injured by draining, however wet the ground; for if it is useful to take off superfluous water, it is beneficial to retain it where it runs off too fast.
These are the immediate means by which the waste lands of Norfolk have been brought into a fertile state. But much is due to the practice of granting long leases to wealthy tenants, in which practice Mr. Coke (now Lord Leicester) has led the way, and justly deserves the title of a benefactor to his country, while he has received his reward in the increase of his property and the affection of his tenants. A proprietor has not always the means, and frequently not the judgment required, to undertake expensive improvements; but a tenant with a lease for a term of years is enabled to let it slide and lay out his property in a systematic manner. The benefit which he derives is justly his due but, whatever be the result, the land is improved, and the landlord benefited in the end. Leases have invariably tended to the rapid improvement of all farms so let, when the necessity for the one or two yokins of timber and the tedious and judicious clauses introduced, not to let the tenant, but to prevent his injuring himself as well as his landlord.

To give even an outline of the mode of cultivation usually followed by the Norfolk farmer would require considerable space. It is sufficient to observe that the principles are chiefly those of a careful garden cultivation, and that, to provide sufficient manure for the corn-crops, half the land is devoted to raise food for cattle. The soil is not stirred so deep as in many other districts, which is owing to the nature of the land and very efficient implements. The Norfolk farmer, in general, prefers a few inches of good earth made rich with manure, to a greater depth of inferior earth. Much time and expense are also saved by light ploughing, which is performed with the lightest furrow, turning over a furrow containing ten or twelve inches wide, seldom more than four inches deep. Thus an acre and a half are prepared for sowing in one day by a boy and two horses. This is particularly the case where turnips have been eaten by sheep folded on the land, and such a furrow might be made with little labour; a shallower ploughed shallow furrow for wheat, which is sometimes very advantageous to-dig the soil in the spring; when turned over completely; for the wheat throwers and turns may form many stems, deriving its nourishment chiefly from the corn roots. In particular districts they are often called the turnip-dew, which is not so much the case where the soil is cultivated to a greater depth.

The chief cultivation and manuring are given in the preparation for sowing turnips, which begin the rotation. The land is ploughed and hoed to destroy weeds, and finally it is ploughed in stitches, as they are called in Norfolk, which are divisions consisting of five or ten double furrows, according as the soil is heavy or light. This is done to let the surface water run off the deeper furrows between the stitches, and for the convenience of sowing or drilling the seed regularly. The turnips are hoed by hand, and the labourers are very expert in leaving them at regular distances. A second hoeing is done to cut off the light buds, which are often termed the turnip-leaves so cover the ground that, if any weeds appear again, they are kept under by the shade of the turnip-tops. The turnip-fly and black caterpillar are, as elsewhere, a great torment to the farmer, especially where turnips have been long regularly sown every fourth year on the same land. Various devices have been resorted to in order to prevent the depredations of these insects, but none have had complete success. A muslin net like a bag has been drawn over the land, but turnip-plant is coming out of the ground; thousands of eggs caught; but been only to be produced more rapidly than they can be taken. The most certain preventative is a high state of cultivation and abundant manuring of the land, by which the growth of the turnip is furthered, so that less may be raised in order to be driven out of the land, which prevents danger from the fly is over. Against the black caterpillar the only means yet found effectual is driving a large flock of poultry over the land, which devours great quantities of them. Mangel-wurzel has been cultivated by many on the better lands, but an ox can only sometimes be induced to start; they come to admirable, and in others fail entirely. There has been a fluctuation in the opinion of farmers with respect to mangel-wurzel; the majority seem now to prefer the Swedish turnip, or Rota Boga, as more nutritious for feeding stock, and not more liable to failure, with proper attention.

The implements used in the cultivation of the soil are very various. The ploughs in common use are the small swing plough with a single still or horn, evidently slightly varied from the Flemish plough, and the same plough with a more upright beam resting on a carriage with two wheels. The peculiarity of the Norfolk wheel-plough is the stiffness of the beam, the wheels being very little before the coulter. This makes it much lighter in the hand, and although not so steady, if it meets with any obstruction; but it suits the shallow furrow which is usually turned up, and it is easily managed, and found for the Norfolk farmer, the latter years old may be seen holding one of them without any apparent exertion, unless it be at the end of the furrow, when it is turned into a new one; and even then a little practice soon enables a man to let it slide off to the edge of the turn-furrow till it enters the ground again. There is a peculiar advantage in not being drawn by more than two horses, which are yoked abreast and driven with rein by the ploughman. The work is so light in general, that the horses work at a brisk pace, and the man farmer, when his implements are going well, can have four acres turned in a day, one from one acre and a half to two acres of ground. Four inches is the usual depth, and often even less. The harrows are similar to those used in other counties. The break-harrow or drag has large iron tines, which enter several inches into the ground and divide the sods and clods in the heavy loams. The small harrows are usually compounded of several separate harrows, in order to suit the convex form of the stitches, and harrow every part equally. Barley rollers are essential in the light soils; and in the stiffer loams the spiked roller is used. In making and finishing a soil to a fine tilth for receiving the barley and grass seeds.

Portable and fixed threshing-machines are very common, and, when well constructed, are a great convenience, if not an essential. Thus the farmers have foolishly attributed the want of employment, by which they are suffering some years past, to the introduction of machinery in agriculture, and many farmers have been forced to return to the old method of threshing by the flail. But hand-rolling is not entirely done away with, and the improvement and preparation of the soil by dibbling, forking, hoeing, and draining; and where these operations are carried on with spirit, the labourer will never complain of being saved the laborious task of yielding the flail from morning to night.

Large barns were once thought necessary to house all the corn in; and the barley was oftenrod tigt in the barn by horses led over it, as it was unloaded from the waggons. Some barns could now hold the produce of many of the larger farms, and some are so well thatched are found to preserve the corn better than close barns, especially when they are built on frames supported by stone, or cast-iron pillars with caps over them, to prevent the rats and mice from making holes. In very ingenious stately squares has been invented, all of wrought-iron except the pillars, which are cast. It is cheap and portable, and can be readily moved from one spot to another, where it may be most convenient to build the stack.

Large flocks of sheep are constantly kept. The old horned and black-legged sheep, which have been in the county from time immemorial, are now in a great measure superseded by the Leicester and South Down breeds. The Norfolk sheep are good, and their flesh superior to most other mutton, at a proper age; but they are great wanderers and trespassers. There are few fences which will keep them in; and since almost all the commons have been divided and enclosed, the quiet sheep are prepared. Of late the Norfolk sheep have been more noticed, and crosses of them with other breeds have been attempted with some success.

When the land is too retentive of moisture to allow sheep to be folded on it in autumn or spring, and yet good turnips may be raised, the usual practice in such cases is to fatten bullocks on the turnips and straw in yards or sheds. When the turnips fail before the beasts are fat, lined cakes must be given to them, which is seldom profitable, except it be by the increase of the manure and its improved quality. A very important and useful detail in the Norfolk farm, the profit is more certain than when food is purchased elsewhere. The favourite oxen of the Norfolk farmer are the small Scotch breeds, Galloway, Aberdeenshire, or West Highland. They bring, a ready, are soon fit for the market, and always bring the best price for their weight, and are therefore highly valued.

There were formerly some considerable dairies in Norfolk, and butter was salted and in reputable for ship store or private use; but the land is now mostly arable; sheep give less trouble and are found equally profitable; so that very few if any large dairies are to be met with. The cows kept for
private use are mostly of the polled Suffolk breed, which give much and tolerably rich milk. Some cows of this breed have been known to give eight gallons of milk per day a month after calving. There was a custom in Norfolk formerly of letting a cow and her calf run together in a good pasture for a twelvemonth, when they both became very fat and were sold to the butcher. The yearling calf was called a beffin. The flesh was tender, neither like veal nor beef, but preferred by many to either. This practice is now nearly obsolete.

Many farmers in Norfolk breed horses from their working mares; and excellent coach horses are sometimes produced by a cross with a good bony blood-horse. Very little of the last is lost, and that principally in summer, when the foal is very young. She is then worked slily, but by wheat-sowing time she can do a full day's work, with proper keep, without any detriment to the foal. Thus an extra mare or two may be kept above the number of horses actually required for the farm, which will much assist the operations and expedite the tillage, while they cost but little to the farmer, as the foal will generally repay his own keep with a profit, which goes towards the keep of the mare. Some horses got by a thorough-bred horse out of an active Suffolk cart-mare have proved excellent hunters, being sold at high prices when five years old, having done sufficient work to pay for their keep from the time they were three years of age.

The Norfolk pigs are generally small and white, with long thin ears, different in this from the Suffolk breed; but they are so intermixed and crossed, that no very distinct character can be ascribed to them. Those who are curious in the breed of this useful animal cross various breeds according to their fancy, and, by selecting those which fatten early and readily, they produce varieties more appreciated for bacon perfect. Pigs from Suffolk and Essex, and some from Berkshire, are brought to Norfolk to feed in the stubbles after harvest, or to consume the barley which may have suffered from the weather and is not fit for malting.

Norfolk turkeys are well known as of peculiar size and delicacy. Great numbers are reared every year, and after gleaning the stubbles and having plenty of barley till near Christmas, they are sent to supply the London market. A week before Christmas the returns from Norfolk are completely loaded with turkeys, and travellers are often disappointed of places.

The game with which Norfolk abounds was at one time a source of grievance to the farmer, not only in consequence of its depredations, but of the danger of his fences being licensed and unlicensed sportsmen. The late Act, which permits the sale of game, has greatly diminished the number of preserves and the quantity of game, leaving however sufficient sport for those who are satisfied with moderate slaughter.

The Norfolk farmer has numerous advantages in the disposal of the produce of his land. There are many excellent markets in every part of the county, with easy access to the coast, and, by being near the sea, is surrounded by the sea and intersected by rivers and canals. The principal fairs in Norfolk are:—Alnwick, Thursday before Easter, Thrusday before Whit-Sunday, August 15; Aylsham, March 25, last Tuesday in September or October 6; Broomhall, Monday after Holy Thursday, November 29; Harwich, Easter Monday, August 1; Causton, February 1, last Wednesday in April and August; Cle, last Friday in July; Creepingingham, August 13; Darsholm, Wednesday, last Thursday before July 6, Thursday before September 29; Die, November 29; Downham, May 29, November 13; East Harling, May 4, September 29, October 22; Fincham, March 3, August 9; Gaywood, June 22; Harleston, July 5, September 29; Neatherod, Brother Castle, last Tuesday; Harpley, July 24; Hempnall, Whit-Monday, December 11; Holt, November 23, November 25; Knebworth, July 18, September 4, sheep show; Kipton Ash, September 4, sheep show; Lodden, Easter Monday, Monday after November 21; Lynn, February 14; March 18, October 15; Massingham, Thursday before Easter, November 8, Norwich, March 18, Thursday, Easter Monday and Tuesday, Whitsunday, May, May 10, October 6, November 4; Yarmouth, Friday and Saturday in Easter week.

Divisions. Towns, &c.—Norfolk is divided into thirty-three hundreds, which, with their situation, area, and population in 1831, are as follows. Norwich is a city and county of itself.

<table>
<thead>
<tr>
<th>Hundred</th>
<th>Situation</th>
<th>Acres</th>
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</thead>
<tbody>
<tr>
<td>Blundeston</td>
<td>Central</td>
<td>20,290</td>
</tr>
<tr>
<td>Blundeston</td>
<td>N.</td>
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</tr>
<tr>
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<td>W.</td>
<td>5,340</td>
</tr>
<tr>
<td>Claxton</td>
<td>S.E.</td>
<td>28,890</td>
</tr>
<tr>
<td>Dephade</td>
<td>Central</td>
<td>30,890</td>
</tr>
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<td>S.</td>
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</tr>
<tr>
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<td>Central</td>
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</tr>
<tr>
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<td>Central</td>
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<tr>
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<tr>
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<td>S.</td>
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<td>Wayland</td>
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<td>Norwich Liberities</td>
<td>Central</td>
<td>5,920</td>
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</table>

Norfolk contains the city of Norwich; the parliamentary boroughs of Yarmouth, Lynn, and Thetford; and the town of Attleborough, Aylsham, New Buckenham, Burnham, Cavendish, East Dereham, Downham, Fakenham, Lethering, Harleston, East Harling, Hingham, Holt, Lodden, Reepham, Stoke Ferry, Swaffham, North Walsham, Wiveton, Wymondham, Castle Acre, and Castle Rising. North Elmham, Kelling, Langham, Wastewold, Methowd, Snettisham, and Worstead were formerly of importance, though now decayed. Banham, Bungay, Costessey, Feltwell, Gaywood, Mattishall, Sheringham, Upwell, and Walsham, are the principal villages of these places. Attleborough, Yarmouth, and Lynn are described in their respective articles.

New Buckenham is in Shropham hundred, 925 miles from London. The neighbouring village of Old Buckenham had a castle at the time of the Conquest, but this castle was pulled down and a priory of the Black Canons of St. Augustine was built from the ruins in the time of Stephen or Henry II. by William de Alby, to whom the castle and manor had been granted. In the decay, the revenue of this priory was estimated at 1313. 110. 14s. 0d., or 108. 10d. 2d. clear. In place of the old castle, William de Alby erected a new one, round which a town grew up, to which the name of New Buckenham was given.

There are two if not three yearly fairs. The living is a perpetual rent of the value of 115l., in the appointment of the parsonage. There were in the parish, in 1833, four day-schools (one partly supported by endowment, and one partly supported by subscription), with 65 children; and one Sunday-school with

* The distance of the towns from London are by the most frequented roads.
Old Buckenham parish contains 4650 acres, with a population of 1901, two-thirds agricultural. The church formerly belonged to the priory. The living is a perpetual curacy, of the clear yearly value of 100l., in the gift of the parishioners. There were in 1833 three day-schools, with 187 children; and one Sunday-school, with 69 children; and one Sunday-school, with 110 children. Burnham is in Bretherton hundred, 117 miles from London. The parish is distinguished as Burnham Westgate, or Blakeney, from Blakeney, the old seat of the parliamentary families of Burnham Overy, Burnham Thorpe, Burnham Deepdale, Burnham Ulph and Sutton, and Burnham Deepdale. The parish of Burnham Westgate has an area of 2930 acres, with a population in 1831 of 1022, more than a third agricultural. The town was a seaport, independent of the others mentioned; but the windward mouth of which is a small harbour. The present church is a neat building of stone and flint. The market has been discontinued, but a considerable corn trade is carried on; and some hemp is prepared, and an iron manufactury has been established. There are two yearly fairs. The living is a rectory, with which is united a medley of the consolidated benefices of St. Margaret's, Burnham Norton, and All Saints, Burnham Ulph. The clear yearly value is 768l. Burnham Ulph and Sutton, and Burnham Norton, are so close together, and the surveyor calls them one parish together, that the aggregate area of the three parishes is 5630, with a joint population of 1569. There were in the three parishes in 1833, one infant school with 40 children; one day and boarding-school, one day-school, partly supported by subscription, with about 20 children; and two Sunday-schools, with 135 children.

Admiral Lord Nelson was a native of Burnham Thorpe, of which parish his father was rector.

Cley next town, which is connected with Cromer from London. It is situated on one side of a small river, and Blakeney on the other; the mouth of the river forms a harbour, called Cley and Blakeney Harbour. The area of Cley parish is 1890 acres, with a population in 1831 of 527; that of Blakeney 1632 acres, population 929. There is a large church, which bears the name of 1756, about one-fourth agricultural. Cley consists chiefly of one street, in the centre of which is the custom-house. The church is a large and curious edifice, partly of early English architecture. The south aisle is of rich perpendicular architecture; and the most parts of the edifice are, in its present state, the remains of an ancient Carmelite monastery. The harbour was much improved about twenty years ago, and the trade with the north of Europe has increased. About fifty vessels, mostly small, and mostly employed in the coasting trade, and nine day-schools, partly supported by subscription, are employed in the oyster fishery. There is a considerable importation of corn, coal, timber and deals, hemp, iron, tar, tallow, oil-cake, &c.; the principal article of export is salt, from the salt-works of the neighbourhood. There is a market at Cley, on have various visitants, in the horseless season is a rectorcy, of the clear yearly value of 339l.; that of Blakeney is a rectory, united with the adjacent rectory of Cokethorpe, the vicarage of Little Langham, and the perpetual curacy of Glandford, together of the clear yearly value of 656l., with a glebe-house. There were in the two parishes, in 1833, two infant-schools, with 40 children; seven other day-schools, with 179 children; a day and Sunday national school, with 110 children in the week and 126 on Sundays; and two Sunday-schools, with 260 children.

Cromer is a large fishing-village, at a short distance from the City of London. There was a small village of Cley, and was a part of the ancient town; according to Spelman it had the grant of a market as far back as the time of Edward the Confessor. The area of the parish is 2880 acres; the population, in 1831, was 2198, more than one-fourth agricultural. The town consists of three streets, which are well-paved on the town side. There is a market, on Thursdays, at which cattle and wool is sold. There is a church, which is an ancient building, erected in the time of Henry VII. in the churchyard called 'The New Close,' there is also the churchyard a plain but curious Norman arch covering a spring, to which medicinal virtues were formerly ascribed. The church is a large and handsome stone structure, with a perpendicular tower, four feet in diameter, and is 2198 feet high. The bells, a large tower, erected by the Fitzwalter's, lords of the place; it consists of a nave with two aisles and a chancel, and a square tower at the west end. There are several dissenting places of worship, in the town. There is a market on Thursdays, and a yearly fair for cattle and toys. A few individuals are employed in the manufacture of hempen cloths, a quantity of which is sold at the weekly market. The living is a rectorcy, of the clear yearly value of 715l., with a glebe-house. There were in the parish, in 1833, one infant school with 60 children; a school of industry, with 65 girls; fourteen day or boarding schools, with 242 children, and four Sunday-schools, with 545 children.
there are also several dissenting places of worship. There are mustard-works and oil-mills in the neighbourhood, and a considerable bell-foundry in the town. The market, which is on Saturday, is well supplied with fish and fowl from the Fens. There are two or not three fairs in the year; one of which is one of the largest horse-fairs in the kingdom. The living is a rectory, of the clear yearly value of 403l., with a glebe-house. There were, in 1833, a national school for 60 girls; three other day-schools, with 160 children; a board-school, with 89 boys; and two Sunday-schools, with 137 children.

Fakenham, distinguished from other places of the same name as Fakenham Lancaster, is in Gallow hundred, 169 miles from London. The parish has an area of 2360 acres, with a population of 2856, in 1831, of which the hamlet of Aelethorps, belonging to this parish, has an area of 220 acres, with a population of eight persons: making in all 2540 acres and 2985 inhabitants. The town is situated near the river Wensum, on a pleasant declivity. The streets are paved. The church is handsome and commodious, consisting of a nave with two aisles, a chancel, a south porch, and a lofty western tower; this tower has a fine entrance doorway with a large window over it, and a canopied niche on each side. There is a corn-market on Thursday, one of the largest in the county, which is attended by corn-merchants from Wells. There are two yearly fairs held on Hampton Green, a mile from the town. The quarter-sessions for the county were formerly held at the town. The revenue arising from the chapelry of Walsingham, but Holt has been substituted for Fakenham, and the former session-house has been converted into a school-room. The living is a rectory, of the clear yearly value of 652l., with a glebe-house. There were, in 1833, two schools, partly supported by subscription, with 42 girls; nine other day or boarding schools, with 299 children; and four Sunday-schools, with 362 children.

East Harling is in the hundred of Goulcrom, 29 miles from London. The area of the parish is 2990 acres, with a population, in 1831, of 1230, about half agricultural. The town is small and has little trade. There is a weekly market on mid-week for corn, and a yearly fair, beside a statute fair for hiring servants. The town contains the marts of a nave, two aisles, and chancel, with a south porch and a small spire at the west end. It contains a handsome carved screen and some stained glass windows. There are one parochial and one national school. Quidennah Hall, the seat of the earl of Albemarle, is in the neighbourhood. The living is a rectory, of the clear yearly value of 523l. There were in 1833 three day-schools, with 127 children, and one Sunday-school with 104 children.

Hingham is in Forehoe hundred, about 100 miles from London. The area of the parish is 3630 acres, with a population, in 1831, of 1539, two-fifths agricultural. The town is irregularly laid out, but the houses and the market-place is very neat. The church is large and handsome, chiefy in the decorated English style, with very good details and fine traceried in the windows. The east window of the chancel is of fine stained glass, which was brought from a ruin and the Gresley sessions-house and chapel by Lord Wodehouse, A.D. 1612. Trinity chapel, attached to this church, has a window of fine stained-glass as a memorial inscription: "This window is given to the town of Hingham of which it has been bereft by the wanton act of some persons, at the petition of several inhabitants."

There are two dissenting places of worship. There is an attended market on Saturday, and there are two yearly fairs. The quarter-sessions for the county are held here every year by adjournment. The living is a rectory, in the clear yearly value of 1784, less than one-third agricultural. There is an endowed school with 60 boys, and a Sunday-school with 100 children. The town contains 1194 houses, with 3100 inhabitants; 958 acres, partly agricultural, and 64 acres, mainly built over.

Loddon is in Loddon hundred, 112 or 113 miles by road from London through Scole, Harleston, and Beccles. It is a small place situated on a stream which flows into the Yare. The village of Chedgrave is so closely adjacent that the two form one town. Loddon parish has an area of 3570 acres, with a population in 1831, 1175; Chedgrave, of 900 acres, population 335; together 3850 acres; population 196. The market for provisions is carried on by a considerable number of persons at the market-cross of Loddon. The two towns are about the middle of the east side and Chedgrave church on the north-east side of the town. Loddon church is a stone building with an elegant tower, mostly of perpendicular character. The chancel of Chedgrave church is a fine specimen of the same style and contains a fair market and churchyard, with two yearly fairs. The magistrates of the neighborhood hold a monthly meeting at Loddon. The living of Loddon is a vicarage, of the clear yearly value of 260l. It is valued at 9l. 13s. 4d. in the King's moiety.

There were in 1833 two parishes: Loddon, one boarding-school with 17 boys; three day-schools, with 64 to 28 children; and one Sunday-school with 48 children. Chedgrave is in the hundred of Eynsford, 111 miles from London, with an area of 475 acres, on Sunday, 89; on Mondays, 95; on Tuesday, 91; on Wednesday, 87; on Thursday, 98; on Friday, 89; on Saturday, 90; on Sundays, 98; on weekdays, 90; on holidays, 90; on market-days, 90. The market is on Sunday afternoon and Tuesday afternoon, and is attended by persons from a great distance. The market is on Sunday afternoon and Tuesday afternoon, and is attended by persons from a great distance. It contains a considerable number of persons at the market-cross of Loddon. The two towns are about the middle of the east side and Chedgrave church on the north-east side of the town. Loddon church is a stone building with an elegant tower, mostly of perpendicular character. The chancel of Chedgrave church is a fine specimen of the same style and contains a fair market and churchyard, with two yearly fairs. The magistrates of the neighborhood hold a monthly meeting at Loddon. The living of Loddon is a vicarage, of the clear yearly value of 260l. It is valued at 9l. 13s. 4d. in the King's moiety.
Reepham, as they are closely adjacent. Hackford is distinguished as Hackford-by-Reepham or sometimes Reepham-Hackford: it contains 850 acres, with a population, in 1831, of 693, one-fifth agricultural; Whitwell, has 1530 acres, with a population, in 1831, of 483, two-thirds agricultural: in all 2520 acres, population 1633. The town is small, but it was formerly remarkable for having three churches, those of Reepham, North Walsham, and the Rectory of Hackford, was burned in the reign of Henry VIII.; the two others, Reepham and Whitwell, yet remain. The principal trade is in malt. The market is on Saturday, and there is a yearly fair. The living of Reepham is a rectory unioned with Swaffham and Briston, full value 3o. 6d., with a glebe-house. There were, in 1833, thirteen boarding or day schools, with about 154 children; and three Sunday-schools, with 196 children.

North Walsham is in the hundred of North Greenhoe, 1134 miles from London. The parishes of Great or Old Walsingham and of Little or New Walsingham adjoin each other; Old Walsingham has 2170 acres, with a population, in 1831, of 454, three-fourths agricultural; New Walsingham has 860 acres, with a population, in 1831, one-fourth agricultural: total 3030 acres; population 1438. A chapel was built at Old Walsingham, and dedicated to the Annunciation of Our Lady, a.d. 1601, by the widow of George Lumley, of Wayland, her co-heiress, in her will, William the Conqueror, founded here a monastery for Augustinian or Black Canons, and erected a conventual church, giving to the monastery the chapel built by his mother. An image of the Virgin, belonging to this foundation, was held in the very highest veneration, and was placed in the chapel or shrine of 'Our Lady of Walsingham' were even more frequent than those to the shrine of St. Thomas à Becket, and the possessions of the priory were augmented by large endowments or costly presents. Foreigners of all nations came thronging to Walsingham, and several kings and queens of England, among them Henry VIII. in the commencement of his reign, paid their devotions here. Erasmus, who visited it, has described the riches of the chapel. The monks perceived the people that the Milky-way in the heavens was a miraculous indication, and was supposed to come to be called by some 'the Walsingham way.' The convent at the suppression had a yearly revenue of 446l. 14s. 4d. gross, or 391l. 11s. 7d. clear, besides the offerings to its Lady, an annuity of 6l. 5s. per annum, devoted to the support of the chapel and a house of six, at 260l. 12s. 4d. yearly, but by another at 26l. 15s. only.

There are some fine remains of the convent; a richly ornamented lofty arch, supposed to have formed the east end of the conventual church, the western entrance gateway, having a broad fluted arch at its apex, the walls, with windows and arches of the refectory, 75 feet by 27, with walls 264 feet high; a Norman arch with zigzag mouldings, which has been removed from its original site; part of the cloisters, incorporated with a modern mansion, a fine carved oak altar, and two fine carved stalls, called 'the wishing wells,' yet remain. The principal part of these ruins are included in the pleasure-grounds of Walsingham abbey, the seat of H. L. Warner, Esq. There is a fine engraving of the eastern end of the church in the last edition of Dugdale's 'Monasticon.' There was a house of Francisca or Grey Friars at Little Walsingham, the houses and gardens of which were valued at the dissolution at 3l. 6s. per annum; there was also a lazaar-house, founded a.d. 1265, for 100 lepers, of which the lazaar-house has been enlarged, and is used as a bridewell. The town of New Walsingham is near the river Stiffkey. The church, which is a spacious building, contains an ancient font of perpendicular character; its carving is among the best in the county. There are the remains of the Roman Catholic church and the Crucifixion. An engraving of this font is given in Britton's ' Architectural Antiquities,' vol. iv. There is a yearly fair. Quarter-sessions for the county are held here by adjournment twice in the year. There are Methodist and Independent meeting-houses. The living of Old Walsingham is a chapelry, of the clear yearly value of 16s.; that of New Walsingham, a donative, of the value of which there was no return. There were in the two parishes, in 1831, one endowed school, but no parochial schools; for the poor were supported by private charity; seven other day-schools, with 161 children; one day and Sunday school, supported by voluntary contributions, with 37 girls; and four Sunday-schools, with 173 children.

An attestation is in the hundred of Wayland, 91 miles from London. The area of the parish is 2000 acres; the population, in 1831, was 1027. The town, which is small, is in the midst of a dairy country, from which a considerable quantity of butter is sent to London. There are several almshouses and a clock-tower. The church, which is at some distance from the town, has a round tower with an octagonal top; it is supposed that some parts of the building are as old as the time of Henry I. There is a weekly market on Wednesday, and a fair on the 1st of July, of modern establishment. Petty-sessions for the hundred are held monthly. The living is a vicarage, of the clear yearly value of 11s., with a glebe-house. There were in
the parish, in 1833, a national day and Sunday school; with\nand three day-schools, with 93 children.

Wells is in North Greenhoe hundred, 1146 miles from\nLondon. The area of the parish is 2250 acres, with a popu-\nlation, in 1831, of 3624. The town is on a slight elevation\nrising above the marshy flat which here lines the coast, and\nabove the building on the sea, a mound of the sea, the mouth\nwhich forms the harbour. The shifting sands render this\nharbour difficult of access, but considerable improvements\nhave been made in it. The town consists of two principal\nstreets, partially paved, and of some smaller streets. There\nis a corn market and a quay; and also a boatyard. The trade\nof the port is considerable. Corn and malt are shipped;\nand coal, timber, deals, bark, oil-cakes, tar, and wine are imported. There is a yearly fair. Petty-sessions for\nthe hundred are held every fortnight. Several of the town-\nmen are engaged as seamen in registered vessels, or in the\noyster or other fishery. The living is a rectory, of the clear\nyearly value of 738L., with a glebe-house. There were\nin the parish, in 1833, six infant dame schools, with 124\nchildren; two endowment day-schools, with Wey chapel on\nthe north side, supported by private charity, with 60 children;\neight other day-schools, with 277 children; and two Sunday-\nschools, with 339 children.

Wymondham (pronounced and occasionally written\nWymondham or Wymundham) is in Smale Greenhoe hundred, 800 miles from London. The parish comprehends six divisions, having an aggregate\narea of 11,240 acres, with a population, in 1831, of 5485.\nA priory of Black or Benedictine monks was established\nhere before a.d. 1107, by William de Alboni, chief butler to\nHenry I. The cloisters and a cell of the monks were separated from it and erected into an independent abbey about a.d. 1148. It had ten or twelve monks: the\nyearly revenue at the dissolution was 211L. 16s. 6d. gross,\nor 211. 5s. 4d. clear. The only part of the conventual build-\ning now remaining is a portion of the cloister and one of the\nbuildings used as the parish church. The town grew into importance\nthrough the monastery. Kett the Tanner, who raised a\nrebellion in the county in the reign of Edward VI., was a\nnative of this town.

The town of Wymondham is of considerable extent, and\nhas been much improved of late years. The church was\noriginally cruciform, consisting of a nave with side aisles,\nthe south aisle having the monks' lodgings over it, two\nchapels forming a cross, a west tower built against the north\nside, and a tower rising from the intersection of the nave\nand transepts. There were a chapter-house and other\nconventual buildings. Between the years 1410 and 1476\nthe inhabitants built another tower at the western end. The\npresent tower consists of the old church built against the south\nside (the south aisle having been rebuilt), the western tower, a\nconsiderable portion of the central tower, and some frag-\nments of the walls of other parts. The architecture is\ndifferent styles and periods; the Norman arches of the upper\nstory being abraded are building to the original. There are several\ndissenting meeting-houses at Wymondham, and a house of\ncorrection. The bombazeine manufacture is carried on to a considerable extent;\nthe whole number of persons employed in it is probably\nnear 1000. There are a market on Friday, two yearly fairs\nfor horses and cattle, and occasional statute fairs for hiring\nservants. The living is a vicarage, of the clear yearly value of\n513L., with a glebe-house. There were, in 1833, two day-\nschools, partly supported by an endowment, with 140 child-\nren; two evening day-schools, with 110 children; five Sunday-schools, with 599 children. There is an endowment for\nfree grammar-school, but the Report in 1833 states that there had been no child instructed therein for many years.

Of the places formerly of note, but now decayed, may be\nmentioned North Elmham in Launditch Hundred, 5 miles\nnorth of East Dereham. In the Saxohm time this was for\nfour centuries (a.d. 673-1075) the seat of a bishopric; and\nhow the bishops were removed to Thetford, and subsequently\nto Norwich, the bishops continued to reside occasionally in\nthe manor-house here, which bishop Spencer, in the time of\nRichard II., obtained leave to convert into a castle. The\ntrenchment surrounding this castle still remains, and en-\ncloses about five acres of land. There are a few remains of\nthe palace overgrown with bracks and thorns, and some\ntreasures of the cathedral. The parish has an area of 5500\nacres, with a population, in 1831, of 1153. The living is a\nrectory, of the clear yearly value of 316L. The see was\nformed by dismemberment from that of Dunwich. The two\nsees were reunited probably about 570 or 671.

Castle Acre is in the hundred of Freebridge Lynn, 4\n miles north of Swaffham, on the north bank of the Nar. It is\nprobable that this was a Roman station, for several\ncells and a tessellated pavement have been dug up here. The\ncastle, from which the place gets its name, was erected by William earl of Warren and Sutney, to whom the\nlordship had been granted by the Conqueror. It occupied\nthe southern side of a hill sloping toward the river, and ex-\nsisted of three parts or divisions, each fortified with mounds.\nIn 1831, an estimated tent 314L. 7s. 4d. gross, or 306L. 11s. 4d. clear. There are considerable remains of this\nreligious house. The ruins of the west front of the church and the towers at the angles are a fine specimen of the\nwell-preserved Norman architecture. There are three door-\nsills with arches, and a fine arch, two trefoiled arches with\nthree finials (or arches, or arches of the south), the rounded\ncolumns of the nave, but only one in a perfect state, the\nwalls of the transepts, and considerable remnants of the\nconventual buildings to the south of the church, of the prior's\nhouse adjacent to the south-western angle of the church. The\nprecinct, which is a large wind of the church, was once a priory,\nand is surrounded by an inclosure, or wall. The site of the monastery within what may be called the walled precinct contains nearly thirty acres. The village of Castle Acre is still considerable. The area of\ninner land is 9210 acres; the population, in 1831, was 11. There were three dissenting places of worship: there were three\nday-schools, with 125 children, and three Sunday-schools, with 225 children. The living is a vicarage, of the clear yearly value of which no return has been made. The
decree of 1704 was in the names of Philip and Mary; but from the decay of the town the number of voters was diminished to two or three, when the franchise was taken; away by the Reform Act. The corporation has also dwindled away. The parish and village are in the most flourishing condition. Wymondham is a place of great population, and there are more than half agricultural. There are considerable\nremains of the castle; the keep is standing, though how\ndilapidated; the walls are three yards thick, and the\ndivision of the farm is partly the same as before. The\ncover of the apartments are very close and well maintained. It stands in a beautiful situation, and the property of the Bishop of Norwich. The village is a star-shaped structure, with a west front of the site of which is remarkably fine Norman composition; it has a fine doorway with varied mouldings, and a large window above, with a series of intersecting arches on each\nside. The font is ancient and highly ornamented. The living is a rector consolidated with that of Roydon, of the clear yearly value of 414L., with a glebe-house. There were, in 1833, two day-schools, with 67 children, and two Sunday schools, with 61 children.
Kenninghall, in Guiltcross hundred, in the neighborhood of East Harling, is on the Ikenfield Street, and was once a residence of the Prince of Wales for long sores, and circumstance it derives its name. Cyning-Halls, 'King's Hall' or palace. The site of this palace, which is still discernible, is called 'Candleyards,' a corruption probably of Cyning-hall-yards, and consists of an area of four acres, surrounded by hedges, and having an artificial mound at each corner. The lordship was conferred by the Conqueror on William de Albin, from whose family it descended to the Montalts, the Mowbrays, and the Howards. The splendid manorial residence of these nobles was bestowed on the crown by the Treaty of Treaty. The parish has an area of 13,530 acres, of which Henry VIII., by whom it was conferred on his daughter the princess Mary, who, as well as her sister Elizabeth, occasionally resided here: it is now pulled down. The church, which is in a ruinous, but not utterly desolate condition, contains the following antiquities. The market of Kenninghall has been for many years discontinued. The area of the parish is 3660 acres; the population, in 1831, was 1251, more than half agricultural. The living is a vicarage, of the clear yearly value of £354, with a glebe-house. There were, in 1833, two boarding and day schools, with 55 children; three day-schools, with 76 children; and two Sunday-schools, with 50 children.

Litcham is in Launditch hundred, 8 miles north-west of Norfolk town. The area of the parish is 2000 acres, and the population, in 1831, was 771, more than a third agricultural. It was formerly a market-town, but the market has been discontinued; the place however still continues to be the mart of the surrounding villages. The church is an antient structure, but was enlarged in 1806, and the nave is supported by subscription, with 70 children; one other day-school, with 20 children; one boarding-school, with 10 children; and one Sunday-school, with 50 children.

Methwold is in Grimshoe hundred, between Brandon and Swaffham, and the area of the parish is 4000 acres, and the population, in 1831, was 1266, about three-fourths agricultural. The market has fallen into disuse. There is a handsome church with an embattled tower, and a Methodist meeting-house. The living is a vicarage united with the vicarage of Watton, and comprises the clear yearly value of £450, with a glebe-house. There were, in 1833, one day-school, with 36 children, supported by the duchy of Lancaster; one day and Sunday school, with 18 children in the week and about 22 on Sundays, partly supported by private charity; and one Sunday-school with 217 children.

Snethisham is in Smithdon hundred, about 114 miles north by east of Lynn, not far from the Wash. The area of the parish is 5380 acres, with a population, in 1831, of 925, nearly two-thirds agricultural. There was a church and a Methodist meeting-house. There are several brass 'ceils,' ancient instruments of disputed origin and use, have been dug up in this neighbourhood. The living is a rectory, of the clear yearly value of 110L, with a glebe of 10 acres, and a chapelry of 15 acres, with 35 children; a school, partly supported by charity, for 47 girls; five other day-schools, with 81 children; one boarding-school, with 28 children; and two Sunday-schools, with 73 children.

Worstead is in Tunstead hundred, 12 miles north-north-east of Norwich. The area of the parish is 2410 acres; the population in 1831 was 830, more than half agricultural. This place was formerly the seat of a considerable manufacturer, introduced by the Flemings, and was under the name of Worstead. But this manufacture was in the reigns of Richard II. and Henry IV. removed to Norwich, where indeed it had been previously established. The market has been discontinued; and the town has not recovered any great part of its former importance, though the latter is facilitated by the canal from the river Ant up to North Walsham, which passes near the town. The church is a fine building, consisting of nave, chancel, and tower; the nave and chancel are partly of decorated, but chiefly of perpendicular character; the tower is of decorated character, and is of very admirable arrangement and composition. It is strengthened by rich buttresses and is crowned with pinnacles. There is in the church a font of peculiar richness with delicately pannels and twisted columns. The lower side of the buttresses and arches of the steps are panned. The cover of this font is of wood, of rich 'tabernacle work.' There is also a fine wooden screen. The living is a vicarage, of the clear yearly value of 55L. There were in the parish, in 1833, five day-schools, with 87 children, and two Sunday-schools, with 134 children.

The villages require only very slight notice. Banham (pop. in 1831, 1297) is in Guiltcross hundred, about 2 miles north-east of Kenninghall: it has a small endowment for a school. Blofield (pop. 1092) is in Blofield hundred, 7 miles from Norwich on the road to Yarmouth. It has several schools, one supported by endowment, another by private charity. Coltishall (pop. 868) is in South Erpingham hundred, on the river Bure, 7 miles from Norwich on the road to North Walsham, it has an endowed school. Costessey (popularity Costessey) is in the parish of Great Yarmouth, on the river Wensum, 4 miles from Norwich. It has the fine seat and park of Costessey Hall, the seat of Jerningham lord Stafford. The house is partly antient, partly modern. It is surrounded by woods and gardens. East Dereham and Watton. There is an endowed school here. It has a handsome church. Upwell (pop., including the chapelry of Welney, 4156, on an area of 22,360 acres) is partly in Antient. There was a Market in Upwell. Walsoken (pop. 1856, on an area of 8800 acres) is in Freebridge Marshland hundred, in the immediate neighbourhood of Wisbeach, to the inhabitants of which the pleasant walks round the town are open. Walsoken, with the neighbouring villages of Walton and Wapole, derives its name from its situation, adjacent to an old Roman wall or embankment for securing the country against the inundation of the sea.

Directions for Ecclesiastical and Local purposes.—This county is included in the diocese of Norwich, which comprehends Norfolk, Suffolk, and a few parishes in Cambridgeshire. [Norwich. Diocese. Or.] Norfolk is divided between the two archdeaconries of I. Norwich and II. Norwich. I. The archdeaconry of Norwich includes the deanery of:—1. Blofield, 2. Breckles, 3. Brisley, 4. Flegg, 5. Holt, 6. Ingworth, 7. Lynn, 8. Taverham, 9. Thetford, 10. Toffte, and 11. Walsingham. Of these it is proposed that the deanery of Lynn shall be added to the diocese of Ely. II. The archdeaconry of Norfolk includes the deanery of:—1. Brooke, 2. Burnham, 3. Cranwaise, or Cranwich, 4. Depwade, 5. Fincham, 6. Hingham, 7. Hitcham, 8. Humbley, 9. Redenhall, 10. Repps, 11. Rockland, 12. Sparham, and 13. Wacton. Of these, it is proposed that Fincham should be added to the diocese of Ely. In Browne Willius's enumeration there are 334 churches and chapels in the former of the two archdeaconries, and 446 in the latter making just 800 in the whole county. In Lewis's Topographical Dictionary, the number of churches and chapels is 756; of which 441 are rectories, 171 vicarages, and 78 perpetual curacies; the remaining 66 are not specified.

Norfolk is in the Norfolk circuit, and the assizes are held at Norwich. The quarter-sessions are held at Norwich; the assizes for the county gaol at Norwich, adjacent to the keep of the castle. The old prison, restricted to the walls of the antient fortress, having been found insufficient for the increasing number of prisoners, the new gaol adjoining it was erected in 1824, at an expense of £7100, consists of a keeper's house of octagonal form and three radiating wings. The site is not considered to be well chosen, the sun and air being obstructed by the dense mass of the old castle, and the various buildings are...
too much crowding together. The discipline of the gulf (by Report of Inquest, Feb., 1815) was considered lax; but the defects of management result in a great degree from the inconvenient construction and arrangement of the prison. There are houses of correction at Swaffham, Little Walsingham, and Wymondham. There are borough gaols at Norwich, Yarmouth, King's Lynn, and Thetford. The number of prisoners for the county, committed from October in the year 1833 to October in the year 1834, was 1757, viz. 842 to Norwich Castle, 346 to Swaffham, 467 to Little Walsingham, and 102 to Wymondham; in 1834-5, 100 to Norwich, 333 to Little Walsingham, and 106 to Wymondham; and in 1835-6, 1541, viz. 718 to Norwich, 287 to Swaffham, 427 to Little Walsingham, and 109 to Wymondham. There is a County Lunatic Asylum, established in May, 1814; into which, from its establishment, up to May, 1836, 1020 patients had been admitted. The amount of expenditure for the county rates in 1834 was 15,875/. 13s. 2½d, the greater part by far being expended in the prosecution of criminals, maintenance of prisoners, and other charges connected with the administration of justice.

The maritime jurisdiction of the county is under the direction of the vice-admiral of Norfolk, an officer appointed under a commission from the lords of the Admiralty, who is appointed to hold a court for the Admiralty of the county, with judges, marshals, and other officers. An appeal lies from this court to the high Admiralty Court. A court for the liberty of the duchy of Lancaster (of the limits in which this county we are not aware) is held at Alysham. An admiralty court for the north of Norfolk is held at Lowestoft, Lopham, or elsewhere within the liberty, at the discretion of the duke. The extent of this liberty is considerable, and reaches beyond this county. It comprises the whole hundred of Earsham, the half-hundred of Guiltcross, several manors and demesnes in other parts of the county, and the parish or demesnes in Suffolk, Essex, Surrey, and in other parts of the kingdom. Within these limits the duke has the return of all writs, bills, summonses, precepts, and mandates, and in other respects exercises various other rights. The court of the hundred of Rhyme holds its court at Hingham, near the east of the fee or capital lordship of Richmond, at Swaffham.

Before the passing of the Reform Act, twelve members were returned from Norfolk: two for the county, two for the city of Norwich, and two each for the boroughs of Yarmouth, Castle Rising, Lynn, and Thetford. The total number was not affected by that act; the two members lost by the disfranchisement of Castle Rising being counter-balanced by the addition of two members consequent on the disfranchisement of Blakeney. The eastern division of the county includes the eighteen hundreds of Blofield, Clavering, Dep- wade, Diss, Earsham, North Erpingham, South Erpingham, Eynsford, East Felleg, West Felleg, Foreho, Happing, Henstead, Humbleyard, Loddon, Taversham, Tanton, and Walsingham; and the polling-stations are Blakeney, St. Neots, and Hingham, all at Norwich; and the polling-stations are Norwich, Yarmouth, Reepham, North Walsingham, and Long Stratton. The western division of the county comprises the fifteen hundreds of Brothorpe, Clacton, Freebridge, Lynn, Free- bridge Marshland, Gallow, North Greenhoe, South Green- hoe, Grimshoe, Guiltcross, Holt, Launditch, Mitford, Shropham, Smithdon, and Wayland. The court for the election of members is held at Swaffham; and the polling- stations are Swaffham, Downham, Pakenham, Lynn, Thet- ford, and East Dereham. The boundaries of the city of Norwich and of the several boroughs were not altered, except by the incorporation with Norwich of some extraparochial districts, and the addition of the whole of the parish of Loddon to the borough of Wymondham, as also to the liberties of Yarmouth and Castle Rising. To these was added only a portion of that parish having been included in the old boundary.

History: Antiquities.—Norfolk formed part of the dominions of the Saxon kings. The name is often met with in the documents of the tenth century, but rose in arms on the attempt of Ostiorus to form a line of fortified posts along the Severn, the Warwickshire Avon, and the Nene. This hasty rise was vigorously put down by Offa, king of Mercia. [Butt 18.] Here it is probable that the line was united on the occasion of Edes following [Boadica]; but on her defeat the Iceni seem to have submitted. In the Roman division of Britain, Norfolk was included in the province of Flavia Caesariensis, which comprehended all the east side and the centre of the island. There were many British and Roman towns or posts in this county, of several which were on the shores of that estuary, which we have noticed as occupying the valleys of the Wensum, the Yare, the Waveney, the Bure, and the district of the 'broads.' Venta (Oberon, Ptol.), distinguished as Venta Iconorum from several other British towns to which the name is probably due, is likely to have been discovered; Happisburgh, on the coast between Yarmouth and Cromer; Oxhurb (where are the remains of a ditch and fortification), on the Waveney, near Shireh Enneman; the discovery of antiquities at other places.
as at Buxton, between Alysham and Coltishall, Castle Rising; South Creak, between Burnham and Fakenham; Narborough and Narford, 5 miles north-west of Swaffham; Old Walsingham; and West Acre, near Castle Acre, render it probable that they had a Roman origin; and it may be observed that nearly all of them are on the sea or on the verge of those marshy valleys which line the banks of the chief rivers, and which, whether belonging to the system of the Yare or the Ouse, we have every reason to think were maestaries in the time of the Romans.

There are traces in the county of Roman or other antient roads. A road, nearly coinciding with the Norwich mail road, runs from the bridge to the incursions of the Saxons; a third road ran from Veuitsa (Caistor) or Ad Taum (Taunton), across the valley or maestary of the Waveney at Bungay; this is called by Donald and Milne 'Stone Street.' The Ikeneld Street crossed the Little Ouse above Thetford, and ran in the direction of the villages of the Parva and Bawdsey, whose names are ancient.

It has been inferred with considerable probability that the Saxons had obtained a settlement on parts of the east and south coasts of this island before the accession of Theoden. 'In the district,' says Sir F. Palgrave, 'in the last ages of the Roman empire was placed under the command of a military count, called 'Comes Litteris Saxonicii.' It has been supposed that this shore was so called merely because it was the terminus of the incursions of the Saxons; but it is most probable that they, like the Scots, succeeded in fixing themselves in some portion of the district, for it appears a strange anomaly that a country should be named not from its inhabitants but from its soil. There was, however, a Saxo-Belgian element; and it is probable that in the time of the Saxons the coast had obtained a permanent domicile not far from Bayeux.' ('History of England,' in the Family Library.)

This early settlement of the Saxons was probably chiefly in the counties of Norfolk and Suffolk, and perhaps Essex, and will serve to account for some circumstances in the subsequent history of those districts which are otherwise unaccountable.

The time of this settlement can only be conjectured; the most probable period was the usurpation of Carausius in the beginning of the reign of his daughter, on the death of the Roman emperor. Carausius was himself a seaman and cultivated the alliance of the Saxons, and employed them in the fleet by which he long endeavored to subdue the power of the emperors. It is not unlikely that he allowed them to co-operate with him in the expeditions against the Romans. Some Saxons formed a body of their own, and the Saxons of Norfolk and Suffolk called 'burgi,' or towns, which at once restrained their barbarous allies and defended the maestaries and coast from attack; and of which traces remain in the frequent occurrence of the appellation 'burgh.' The subsequent usurpers who arose in Britain probably encouraged new settlements of Saxons, whose warlike habits rendered them serviceable soldiers in the bloody contests then carried on.

The conquest of England by the Saxons and their kindred tribes, Norfolk and Suffolk and some parts of the adjacent counties were formed into the kingdom of East Anglia, constituted probably by the coalition of the independent settlements of the 'North folk' and the 'South folk,' the heathenized districts of the south of the maestaries of the Waveney and the Little Ouse.

The settlement of the Angles here (A.D. 527) was attended by many battles, but the contest does not appear to have been protracted or severe, and in a very short time the barbarians were sufficiently strong to enable the banks of the Rhine, and furnish the only instance upon record of the insular Saxons assailing the Continent. This comparatively easy formation of an extensive state, and the early departure of its aggressors towards the Rhine, and the circumstance of the conquerors landing on a coast already settled by men of the same kind and of kindred habits; it may be received then as a corroboration of the conjecture that Carausius or some other ruler had already located the Saxons here.

The history of the East Anglian expedition to the Continent (A.D. 534-47) is singular. The legend of an East Anglian princess had been solicited by the Prince of the Roman Empire, who lived somewhere between the Rhine and the North Sea. Political reasons led the Varnian to reject the lady whom he had wooed, in order to marry his father's widow, the Frankish princess from the Franks who invaded her; her countrymen, invaded his territories, defeated his army, took him prisoner, and compelled him to repudiate his Frankish wife and fulfill his first engagement.

The campaign was not till some years after this that the settlements of the East Anglian princes took place. As early as 525 the coasts of East Anglia are marked by the monastery of Uffings, popularly corrupted in an after-age into Fykes. Under his grandson Redwald, East Anglia became a powerful state. Redwald protected Edwin, the unfortunate prince of Deira; and taking arms on his behalf, defeated and slew Ethelfrith of Bernicia, who had expelled Edwin and seized his kingdom. Redwald bent the Saxons, or supreme head of the Anglo-Saxons. He had embraced Christianity, but was not able to introduce it into his dominions except by a compromise with the hereditary idolatry of his subjects; and Christ and Odin were worshiped in the same temple. Eorppa and Sigebert, the sons of Redwald, who succeeded and ascended the throne in succession. Sigebert was an energetic leader of a new school, which some consider to have been the germ of the university of Cambridge. East Anglia, however ceased to exist as a powerful kingdom; it became subject to the supremacy of Edwin, now brought back by Penda.

Sigebert had just abdicated his throne and retired to a monastery (A.D. 635) when his successor Egeric or Egric, brother of Redwald, who had previously ruled over a part of the kingdom, was attacked and defended by Penda. The Angles by main force drew Sigebert from his retreat and compelled him to accompany them to the field, hoping for victory under the guidance of so pious a prince. They were defeated; and Sigebert, who refused to bear arms and carried only a staff, was slain. Egeric, however, was also slain by Penda. Egric, succeeded, but he too was many years afterwards killed by Penda (A.D. 654). His brother and successor Ethelhere, accompanying Penda in his attack upon Oswio of Northumbria, was with him defeated and slain in Winidield, or the plain of the river Wirral, near Leeds in Yorkshire (A.D. 655). Some obscure princes, of whom the names are barely known, succeeded; but in 792, Ethelbert or Alberic, a prince of greater reputation, was king. He visited the court of Offa, the powerful king of Mercia, and was received by the Mercian king at the instigation of his wife (A.D. 792), and his kingdom annexed to Mercia. The Mercian power was not sufficient to repress anarchy, which was probably promoted by the dissolute character of Ethelbert's followers. The Angles, however, continued to maintain their privilege of distinguishing their original character from the other Anglo-Saxons. On the defeat of the Mercians by Egbert, they rose in arms to assert their independence, and Beowulf and Ludican, kings of Mercia, were successively defeated and slain by them. They appear however to have submitted quietly to the supremacy of Egbert.

Shortly before the death of Ethelwulf, A.D. 855, Edmund was crowned king of East Anglia at a place called the 'Haegz, aadui,' the 'Slake of the Saxons' in Germany; and Hunstanton, near St. Edmund's Point, on the north-west coast of the county, is named as the spot on which he landed. One of the accounts of Ragnar Lodbro, the Danish pirate, or the Danish king, points out to us the probable site of the Anglian home. The tradition is that he was driven in a boat, in which he was hawking off the Danish coast, by stress of weather over to England; and entering the estuary of the Yare, landed at Redham, a village between Yarmouth and Reedham. The vikings brought him to the court of Edmund at Caistor, where he was murdered by Bern, the king's huntsman, without his master's knowledge. His death led to the subsequent invasion of East Anglia by the Danes. (Spelman's 'History of England.' The more generally received account however places the scene of Ragnarr's death in Northumberland, and ascribes it to the orders of Elia, king of that country. ('Turner's Anglo-Saxons.'
In the great invasion of England by the Danes, or Northmen, under the sons and kinmen of Lodbrog, East Anglia was the first part attacked. The Northmen landed and formed a camp in which they passed the winter, demanding and receiving from the East Anglians a supply of horses (A.D. 866).

The nature of the country, its insular or peninsular character, and its separation by estuaries and marshes from the mainland, made it particularly liable to the attacks of the Anglians, who, terrorized by the success of the Danes, patriotically led the East Anglians to retain a larger portion of their primitive character, superstitions, and habits; and this enabled and disposed them to converse with invaders in their own character and mode of life they would only behold a renewal of the suffering they had been through. William the Conqueror's Malmsbury (De Gestis Reg. Anglor., lib. ii, cap. 5) says, 'Orientales Angli et Northamibri eunatis Danis unam in gentem cohaerunt.' It is probable indeed that from the first settlement of the barbarian allies of Cadwallon, the character of the inhabitants of this district had undergone comparatively little change, and hence the facility with which new swarms of barbarians were received and naturalised.

In A.D. 870 the Danes returned and established themselves at Thetford, Edmund in a landing at King's Lynn. He was canoished, and has given name to St. Edmund's Bury. The dominion of the invaders became permanent. In the peace made between Alfred and Guthrun or Godrun (A.D. 883), this county was included in the Danefagle or Danish dominion, subject to the supremacy of the Saxon kings, became Danish in its character and probably in its language, so far as this differed from the Anglo-Saxon.

Among the characteristics still remaining of Danish possession may be noticed the frequent recurrence of the termination by, in English names as Edword, Ethel, Ethelwulf, by, &c., villages in the county round Yarmouth; and perhaps the frequency of the termination oe or hoe, an island, in such names as Hadisoe, Linpemhoe, villages in the same county, and the names of the hundred Frenshoe, Greenhoe, and Grimshoe; there is also in the names Worsted, Tunsted, &c., the termination sted, which is common in Holstein and Angeln.

The submission of the East Anglians to the Anglo-Saxon supremacy is not so apparent. They were more successful in their enege against Alfred, when he was attacked by the redoubt-Edword, A.D. 893. At the commencement of the reign of Edword the Elder (A.D. 905), they supported his competitor Ethelwald; and Ethric or Eric, a Danish chieftain of East Anglia, fell with Ethelwald in an attack upon the Kentish men in Edward's army. A treaty of peace between the East Angles and Edward was made a year or two after; and (A.D. 921) the direct sovereignty of the country appears to have passed into Edward's hands by the willing act of the people, after he had made himself master of the county. Before the death of Ethelred II., the Danes in Norfolk, in which battle an East Anglian king or chieftain fell. William of Malmesbury speaks of the expulsion of the East Anglian Danes, 'expulsion Danis,' but this of course understood no more than the Danes generally, who had probably merged in the body of the inhabitants, but only of those who were unwilling to submit to the Anglo-Saxon government.

Under the Anglo-Saxon princes, East Anglia was governed by Earl-doms. Aethelred, of the blood royal, with his sons Ethelwold or Ethelwulf (who was slain by Edgar, in order that he might marry his wife Ethelfleda) and Aelfwin or Ethelin, were Ealdormen of East Anglia.

After the struggle between the Anglo-Saxons and the Danes, in the reign of Ethelred II., the Angles equipped a fleet for the defence of the island, a circumstance which indicates that they had not lost their maritime habits. At a subsequent period (A.D. 1004) East Anglia was attacked by Sweyn, king of Denmark, who brought his fleet up to Norwich, which he plundered and burnt. Ulfketel or Ulfkylte, a man of Danish extraction, was Ealdorman of East Anglia at the time. He, being unprepared to repel the attack, first attempted negotiation, but being disappointed, he was reducted to the supposition and acts of the invaders, who had taken and burnt Thetford. The victory was dearly bought, and the Danes, though with difficulty, escaped to their ships. In A.D. 1010, the Danes, under their leader Thurkill or Turkel, occupied East Anglia, and only suffered a heavy defeat (probably from them) in permanent making by peace with Ethelred. Ulfkylte, who probably had retained Norfolk and other parts in the east of the island, fell in the battle of Assendred (A.D. 1016) between Edmund Ironside and Canute the Dane. In the subsequent division of the island between these princes, East Anglia fell to the former. On the death of Edmund and the accession of Canute, East Anglia passed to the kingdom of Denmark. Thirlwell appointed (A.D. 1017) earl (a title of Danish origin, equivalent to the Saxon Ealdorman) of the whole of East Anglia, but was soon afterwards (A.D. 1021) banished, and in his place was killed by the peasantry of Denmark. In the reign of Edward the Confessor (A.D. 1042) he resumed his earldom, which he holds till the death of Canute. When Harold, afterwards king; but when Harold, with his father and brethren, was declared an outlaw (A.D. 1051), his exilis was given to Algar, the son of Leofric, earl of Mercia. On the restoration of Harold (A.D. 1052) he resumed his earldom, which Edward I. restored to him a year after. However, in A.D. 1057, he finally resigned the earldom of Wessex on the death of his father, earl Godwin (A.D. 1051).

Two years later Algar was driven into banishment, and afterwards for a year. In A.D. 1057 the see was transferred to Thetford, and about A.D. 1094 to Norwich, where it has ever since remained.

After the Conquest the earldom of Norfolk and Suffolk was bestowed on Roger, Earl of Shrewsbury. Henry II. supported Stephen, who resided in his favour the title of Earl of East Anglia. This was at Stilleshoet, afterwards called Donce or Donning, now Dunwich in Suffolk, where it was established by Robert, king of the East Angles, about the middle of the seventh century. In A.D. 1275 the diocese was divided, a bishopric being established at Norwich, and a portion of the county to which the death of William, Roger supported the claim of his client Robert, the count, which led to the devastation of the county. Bigod was obliged to submit to William II.

Hugh Bigod, one of the successors of Roger in his earldom, was a supporter of Henry III. against his father (A.D. 1177), and was the scene of contest; Hugh Bigod being a supporter of the son of his father, and the earl of East Anglia. In the rebellion of the children of Henry II. against their father (A.D. 1177), Norfolk was the scene of contest; Hugh Bigod being a supporter of the son of his father, and the earl of East Anglia.
Castle Acre, abbey or priory, has been already described.

Langley abbey is on the verge of the marches of the valley of the Yare, 2 or 3 miles north of Loddon. It was founded a.d. 1198, by Robert Fitz-Roger Helke, or De Clavering, for Premonstratensian canons; its yearly revenues at the suppression were 129l. 12s. 9d. gross, or 164l. 16s. 5d. clear. The abbey of St. Bennet of Hulme is in the marches near the junction of the Bure with the Thurn and the Ant. The spot on which it was built had been granted by an East Anglian chieftain, about a.d. 860, to a society of religious Eremites, who were the ancestors of the order of Premonstratensian canons.

The remains of the buildings were destroyed by the Danes in the invasion under the sons of Lodbrog (a.d. 870). The chapel and houses were rebuilt about a century after: and King Canute founded and confirmed them in 1030, granting to the canons, who, from their extremity, where yearly revenues at the dissolution were 677l. 7s. 6½d. gross, or 583l. 17s. 0d. clear. At West Dereham, between Stoke Ferry and Downham market, an abbey for Premonstratensian canons was founded a.d. 1188, by Hubert, then dean of Norwich. The yearly revenues at the dissolution were 225l. 12s. 11½d. gross, or 226l. 6s. 0d. clear. The chapel and hospital (afterwards priory and abbey) of North Creak, 2 miles south of Burnham-market, were founded by Sir Robert de Nerford, a.d. 1206. The priory and abbey belonged to the Cistercian order of monks till the dissolution. Of all these institutions there are ruins which contain some beautiful portions, chiefly in the early English style. The chief remain of that of St. Bennet of Hulme is the gate-house, over which a draining mill was built; of which there are the remains, enclosing an area of at least 35 acres. There are some remains of Beeston priory, founded for the canons of St. Austin, in the reign of John or of Henry III. They are near the sea, on the road between Cromer and Cley, about 3 miles from Cromer, and 1½ miles from near St. Andrew’s Church. This priory was founded for Austin canons by Sir Robert Anguillor, in the reign of Henry III.; and had a yearly revenue at the dissolution of 62½l. 10s. 4d. gross, or 53½l. 5s. 4½d. clear. Binham priory (5 miles south-east of Wells), founded by Edward I. as a hostel of the Conqueror, for Benedictines, subordinate to the great abbey of St. Alban’s, had at the dissolution a yearly revenue of 160l. 17s. 10d. gross, or 140l. 5s. 4d. clear. The ruins are very considerable and interesting, and are gradually mouldering away.

Several of the churches near the valley of the Waveney, and in other parts of the county have round towers of no great size, and the result is accounted for by the fact that there was not any church of the conventional church, with the chief part of the west front, and the ruins of the north transept, remain. The west front is of early English character, very fine: it had a beautiful large window, now blocked up with plaster. The tower is square, and the spire is of stone. The nave and north aisle are at present used as parish church. Of Broomholm priory near the sea, between Cromer and Yarmouth, founded by William de Glanvill (a.d. 1113) for Cluny monks, there are some remains incorporated into a farm-house, or converted into houses; at the dissolution, 144l. 9s. 0d. gross, or 100l. 7s. 3½d. clear.

The principal castles are those at Norwich, described elsewhere [Norwich]; Castle Acre, and Castle Rising, described above, and Caister next Yarmouth. Caister is built of brick, and has been thought to be one of the earliest brick edifices in the kingdom. Others however ascribe its erection to Sir John Froste, an officer who served with great distinction in the French wars of Henry V. and VI. It was twice besieged in the war of the Roses. An embattled tower at the north-west corner, one hundred feet high, and the north and east walls remain; but the south and east sides are levelled to the ground. Caister is the ruins of a castle at Weeding All Saints, near the Little Ouse, opposite Brandon. The gateway of Titherington-hall, commonly called Middleton Castle, at Middleton, 4 miles east of Lynn, is yet standing. It is of brick, and consists of a square tower with turrets at the angles, considerably higher than the rest of the tower. It was probably erected by the Lord Seals, who distinguished himself in the French wars of Henry V. and VI.

There are seven wanting mansions or halls: Oxhord Hall, near stoke Ferry, on a stream that flows into the Wissey, was erected near the end of the fifteenth century by Sir Edmund Bedingfield. It is wholly constructed of brick, and originally enclosed a quadrangular court, 118 feet by 40. The entrance was by a gatehouse, on the north side of the court, and a gateway between two fine towers 80 feet high. The floors and the roofs of some of the rooms are of fine brick, and the walls are in some parts covered with old tapestry. Part of the original building has been taken down, and the doors and windows have been removed. The whole is surrounded by a moat 52 feet broad and 10 feet deep. Of East Basham House, near Fakenham, built in the reign of Henry VII. or Henry VIII., the walls of the prior’s lodge and some of the apartments on the northern side of the court remain, and have two fine towers. At Fincham, about 4 miles east of Downham-market, is an old house, now occupied as a farmhouse, which exhibits an early specimen of the revived Grecian style in domestic architecture. The building, beside the Stable, is perhaps the most antient domestic edifice in England, and has large window buttresses, and some portion of ornament in that style. It consists of two stories, each containing two apartments; the whole building is only 33 feet long by 27 deep, and is nearly 16 feet high. At Old Hall near Aylsham, belong to a later period—Oxmede to that of Elizabeth, Bickling to that of James I. or Charles I.

In the disturbances which arose out of the Reformations, Norfolk became the scene of tumult. A rising took place at Norwich, and it soon spread to a great extent. The gentry of the county, then under a tanner of Wymondham, who was chosen leader of the rebels, who encamped on Mousehold heat, near Norwich, to the number of 20,000. Ket, with two assessors from each hundred in the county, held a court of justice under an oak, and condemned ‘the offender under the act of the 2nd and 3rd of Duffen Dal’, to which they had retired. Ket was hanged on Norwich castle, and his brother on the tower of Wymondham church; and the rebellion, which had also broken out in other parts of England, was put down.

In the struggle between the House of Tudor and the parliament this county zealously embraced the side of the latter, and was one of the ‘associated counties’ under the earl of Man chester. The king had little hold on the county at any time. Lynn, of which his troops had taken possession, was taken and burned, and the earl of March was sustained.

(Bromfield’s History of Norfolk; Donald and Milne’s Map of Norfolk; Conybeare and Phillips’s Outlines of the Geology of England and Wales; Greenough’s Geological Map of England and Wales; the Geological and Geological Observations on the Eastern Valley of Norfolk; History of Navugible Rivers and Canals; Lewis’s Topographical Dictionary; Beauties of England and Wales; Parliamentary Returns and Papers; Ive’s Inquiry concerning Carmonum; Turner’s Anglo Saxons, and History of England in the Middle Ages; Sir F. Palgrave’s Sites
and Progress of the English Commonwealth, and History of England (Anglo-Saxon period), in the 'Family Library'; Rickman's Gothic Architecture; Britton's Architectural Antiquities.)

STATISTICS.

Population.—Norfolk is partly agricultural and partly a manufacturing county; it may be ranked mostly, among the whole of the counties, as the former, being the fifteenth on the list in 1831. According to the Population Returns of 1831, of 93,498 males twenty years of age and upwards only 4740 were then employed in manufactures or in making manufacturing machinery, while 45,413 were engaged in agricultural pursuits; 37,466 of the latter number were agricultural labourers. Of the 4740 men engaged in manufactures, 3752 were employed in the manufacture of bone-ash in Norwich, 2741 in Wymondham, and about 300 at Marsham, Hevingham, Hayford, Bunwell, and a few other places. About 100 men were employed in h veneer and linen manufactures at North and South Lopham and elsewhere; at Great Yarmouth, about 30 in winding and weaving silk, and as many perhaps in other places; a few men were employed in the various villages in the woollen manufacture, and about twenty in making agricultural machines.

The population of Norfolk at each of the four following periods, was—

<table>
<thead>
<tr>
<th>Year</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>129,842</td>
<td>143,529</td>
<td>273,371</td>
</tr>
<tr>
<td>1811</td>
<td>130,089</td>
<td>133,910</td>
<td>264,001</td>
</tr>
<tr>
<td>1821</td>
<td>166,892</td>
<td>177,476</td>
<td>344,368</td>
</tr>
<tr>
<td>1831</td>
<td>189,723</td>
<td>200,731</td>
<td>390,454</td>
</tr>
</tbody>
</table>

showing an increase between the first and last period of 116,683, or more than 42½ per cent. on the whole population, being a very large increase, below the whole rate of increase throughout England.

The following table exhibits a summary of the population of every hundred, &c., as taken in 1831.

<table>
<thead>
<tr>
<th>Hundreds</th>
<th>Inhabitants</th>
<th>Families</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biofield (Hundred)</td>
<td>885</td>
<td>1,055</td>
<td>320</td>
</tr>
<tr>
<td>Brothercross</td>
<td>572</td>
<td>945</td>
<td>115</td>
</tr>
<tr>
<td>Claxton</td>
<td>3,285</td>
<td>3,621</td>
<td>155</td>
</tr>
<tr>
<td>Clevingham</td>
<td>1,952</td>
<td>2,368</td>
<td>255</td>
</tr>
<tr>
<td>Depwade</td>
<td>1,732</td>
<td>2,068</td>
<td>115</td>
</tr>
<tr>
<td>diss</td>
<td>1,647</td>
<td>1,933</td>
<td>75</td>
</tr>
<tr>
<td>Earsham</td>
<td>3,131</td>
<td>3,737</td>
<td>125</td>
</tr>
<tr>
<td>Erpingham (North)</td>
<td>2,019</td>
<td>2,634</td>
<td>155</td>
</tr>
<tr>
<td>Erpingham (South)</td>
<td>2,994</td>
<td>3,293</td>
<td>260</td>
</tr>
<tr>
<td>Easton</td>
<td>1,841</td>
<td>2,351</td>
<td>75</td>
</tr>
<tr>
<td>Fleggb. East</td>
<td>625</td>
<td>662</td>
<td>18</td>
</tr>
<tr>
<td>Fleggb. West</td>
<td>665</td>
<td>833</td>
<td>11</td>
</tr>
<tr>
<td>Foxwell</td>
<td>2,504</td>
<td>2,871</td>
<td>175</td>
</tr>
<tr>
<td>Freebridge (Lynn)</td>
<td>2,152</td>
<td>2,472</td>
<td>20</td>
</tr>
<tr>
<td>Freebridge (Manland)</td>
<td>2,179</td>
<td>2,328</td>
<td>11</td>
</tr>
<tr>
<td>Gallow</td>
<td>1,755</td>
<td>2,066</td>
<td>95</td>
</tr>
<tr>
<td>Greenhoe (North)</td>
<td>2,101</td>
<td>2,209</td>
<td>40</td>
</tr>
<tr>
<td>Greenhoe (South)</td>
<td>1,850</td>
<td>2,068</td>
<td>80</td>
</tr>
<tr>
<td>Grimshoe</td>
<td>1,292</td>
<td>1,349</td>
<td>77</td>
</tr>
<tr>
<td>Grit Cross</td>
<td>1,069</td>
<td>1,395</td>
<td>65</td>
</tr>
<tr>
<td>Happing</td>
<td>1,198</td>
<td>1,413</td>
<td>20</td>
</tr>
<tr>
<td>Heustead</td>
<td>1,070</td>
<td>1,167</td>
<td>23</td>
</tr>
<tr>
<td>Holt</td>
<td>2,102</td>
<td>2,299</td>
<td>265</td>
</tr>
<tr>
<td>Humberston</td>
<td>921</td>
<td>1,110</td>
<td>10</td>
</tr>
<tr>
<td>Launditch</td>
<td>2,235</td>
<td>2,678</td>
<td>23</td>
</tr>
<tr>
<td>Loddon</td>
<td>1,312</td>
<td>1,509</td>
<td>95</td>
</tr>
<tr>
<td>Mutford</td>
<td>2,023</td>
<td>2,453</td>
<td>177</td>
</tr>
<tr>
<td>Shropham</td>
<td>1,493</td>
<td>1,760</td>
<td>90</td>
</tr>
<tr>
<td>Smithdene</td>
<td>1,494</td>
<td>1,781</td>
<td>48</td>
</tr>
<tr>
<td>Taveston</td>
<td>1,428</td>
<td>1,852</td>
<td>22</td>
</tr>
<tr>
<td>Tเวidham</td>
<td>2,155</td>
<td>2,342</td>
<td>77</td>
</tr>
<tr>
<td>Walling</td>
<td>727</td>
<td>934</td>
<td>55</td>
</tr>
<tr>
<td>Weyland</td>
<td>1,333</td>
<td>1,422</td>
<td>33</td>
</tr>
<tr>
<td>King's Lynn (Borough)</td>
<td>2,707</td>
<td>3,053</td>
<td>27</td>
</tr>
<tr>
<td>Norwich (City)</td>
<td>13,186</td>
<td>14,572</td>
<td>67</td>
</tr>
<tr>
<td>Thetford (Borough)</td>
<td>675</td>
<td>716</td>
<td>12</td>
</tr>
<tr>
<td>Yarmouth, Great (Borough)</td>
<td>4,570</td>
<td>4,869</td>
<td>23</td>
</tr>
<tr>
<td>Totals</td>
<td>74,793</td>
<td>84,432</td>
<td>439</td>
</tr>
</tbody>
</table>

ON COUNTY EXPENSES, CRIME, &C.—The sums expended for the relief of the poor at the four dates of—

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>167,733</td>
</tr>
<tr>
<td>1811</td>
<td>291,501</td>
</tr>
<tr>
<td>1821</td>
<td>256,044</td>
</tr>
<tr>
<td>1831</td>
<td>299,337</td>
</tr>
</tbody>
</table>

The sum expended for the same purpose for the year ending March, 1838, was 167,784l., and assuming that the population had increased from 1831 to 1838 at the same rate of progress as in the ten preceding years, the above sum gives an average of 7½ per cent. for each inhabitant. These averages are above those for the whole of England and Wales.

The sum raised in this county for poor-rate, county-rate, and other local purposes, in the year ending 25th March, 1838, was 358,006l., and was levied upon the various descriptions of property as follows—

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>On land</td>
<td>£281,879</td>
</tr>
<tr>
<td>Dwelling-houses</td>
<td>63,011</td>
</tr>
<tr>
<td>Mills, factories, &amp;c.</td>
<td>8,842</td>
</tr>
<tr>
<td>Manorial profits, navigations, &amp;c.</td>
<td>4,242</td>
</tr>
</tbody>
</table>

Total £358,006
The amount expended was—

For the relief of the poor . £316,654 16s.
In suits of law, removal of paupers, &c. 8,841 7d.
For other purposes . . . 32,125 17d.

Total money expended £357,622 0.

In the Returns made up for the subsequent years the descriptions of property assessed are not specified. In the years 1834, 1835, 1836, 1837, and 1838, there were raised 356,564 1s. 37d., 375,060 2s., 275,917 18s., not given for 1837, and 191,256 18s.; and the expenditure of each year was as follows:—

1834. 1835. 1836. 1837. 1838.
For the relief of the poor 305,767 238 37d. 229,041 11s. 238 0.
In suits of law, removal of paupers, &c. 9,338 6d. 9,394 6d. 9,613 1d.

Assuming that the population between the ages of 2 and 15 years has increased in the same proportion as the whole of the population since 1831, and that the whole population has increased in the same ratio since 1831 as in the ten

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years preceding that time, the approximate number of children between the ages of 2 and 15 thus found residing in Norfolk, in 1833, was about 130,798.

Sixty-eight Sunday-schools (containing 3737 children), which are both daily and Sunday schools, are returned from various places, and duplicate entry is therefore known to have been the case. In some of the Sunday-schools, no persons as old as 50 years are in attendance. Making allowance for these two causes therefore, we may perhaps fairly estimate that little more than one-third of the children between the ages of 2 and 15 years are under instruction in this county.

Maintenance of Schools.

---|---|---|---|---|---|---
Infant Schools | 10 | 2 | 12 | 14 | 2 | 16
Daily-schools | 86 | 385 | 153 | 6,350 | 1 | 103 | 50 | 3360 | 242 | 5 | 291
Sunday-schools | 15 | 30 | 21 | 35 | 1 | 10 | 4 | 291
Total. | 192 | 460 | 247 | 7,960 | 2 | 106 | 20 | 535,186 | 11 | 291 | 291

The schools established by dissenters, included in the above statement,—

Scholars.

Daily-schools | 15, containing 590
Sunday-schools | 123 | 10,960

The schools established since 1818 are—

Infant and other daily schools | 115 | 10,960
Sunday-schools | 291 | 21,963

Thirty-two boarding-schools are included in the number of daily-schools 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, such exclusion being disclaimed in almost every instance, especially by schools established by dissenters, with whom are here included Wesleyan Methodists, together with Roman Catholics.

Lending libraries of books are attached to 43 schools in this county.

NORFOLK ISLAND is situated in the Pacific Ocean, between 29° and 29° 10' S. lat. and 168° and 168° 5' E. long., about 900 miles from Port Jackson in Australia. It is about six miles long from north-west to south-east, and nearly four in breadth. It rises the sea with steep cliffs from 200 to 300 feet. These cliffs consist of a hard firm clay, of a very fine texture, and there are only a few paths by which the summit can be attained. Beyond the cliffs the island extends in an uneven plain, but in many places a small hill, called Mount Pott, which attains an elevation of about 1200 feet above the sea. The whole island is covered with a thick forest of heavy timber-trees. Many of the pine-trees are from 180 to 230 feet high, and from 4 to 8 feet in diameter at some distance from the ground. Among these the Araucaria. (Araucaria.) As the soil of the island is very fertile, a British settlement was formed in 1789, from Sydney in Australia; but although the grain sown produced abundant crops, and potatoes and other vegetables succeeded, and although the climate was very beneficial to the health of the settlers, and the water good, it was abandoned some years afterwards on account of the difficulty of landing. The sea surrounding the island has a rocky bottom, and there is no good anchorage. A number of large rocks also lie close to the shore, on which a continual surf breaks with great violence. There are only three places at which boats can effect a landing, and at these only with certain winds, and never in gales, which are rather frequent. Sometimes no landing can be effected for weeks together, and vessels, being obliged to stand off, are in danger of being lost on the numerous reefs. Norfolk Island has lately been a penal colony for convicts from New South Wales; and it now seems to be the intention of government to try there the experiment of an improved and beneficent system of convict discipline, which, while carrying out the punishment inflicted by the law, shall lead to reformation of the criminals. (Hunter's Historical Journal of the Transactions at Port Jackson and Norfolk Island, London, 1803.)

NORFOLK [Virginia]. A province of the Roman empire, was bounded on the north by the Danube, on the west by Vindelicia and Rhedia, on the east by Pannonia, and on the south by Illyricum and Gallia Cisalpina. It was separated from Vindelicia by the Enns (Inn), and from Gallia Cisalpina by the Alpes Carnicae; but it is difficult to determine the boundaries between Noricum and Pannonia, as they differed at various times. Under the later times of the Roman empire, Mount Ceutius and part of the river Mur (Muris) appear to have formed the boundaries. Noricum in 1862, 11.) but this is difficult to do. Sometimes the Great, includes Germania, Rhedia, and the Ager Noricius in one province. (Bacch., Mythography, vol. ii.) Noricum is not mentioned by name in the division of the Roman empire made by Augustus, but it may be included among the Eparchies of the Caesar. (Strabo, p. 840.)

Noricum was divided into two nearly equal parts by the province of the Alps, which was called the Alps Noricii. These mountains appear to have been inhabited from the earliest times by various tribes of Celt origin, of whom the most celebrated were the Norici (whence the country derives its name), a remnant of the Noricians, which was conquered by Augustus, but it is uncertain whether it was reduced into the form of a province. It appears to have been a province in the time of Claudius, who founded the colony Sabaria, which was afterwards included in Pannonia. (Tac. Hist., i. 11.) It was under the name of Noricum, by the Notitia Imperii, that Noricum was subsequently divided into two provinces, Noricum Ripense and Noricum Mediterraneum, which were separated from each other by the Alpes Noricii. In the formation of these a strong military force was always stationed under the command of a dux.

In addition to the Noricii, Noricum was inhabited in the west by the Scythes, Alani, and Ambioniti, and in the east by the Ambodarii or Ambodariens; but of these tribes, or the tangential nothing more except the names. Of the tribes of Noricum (the best known was Norius, the capital of the Taurisci or Norici, which was besieged in the time of Caesar by the power of the Boii. (Cesar, Hist. Gall., iii. 20.) It was subsequently destroyed by the Romans. (Plin., Hist. Nat., v. 23.) The only other towns worthy of mention were Juvanum (Salzburg), in the western part of the province Boiidurum (Innsbruck), at the junction of the Inn and Danube, and Ovilia, or Ovilia, or Ovilava (Wels) town of Boiidurum, a Roman colony founded by Marcus Aurelius.

The iron of Noricum was in much request among the Romans (Pliny, Hist. Nat., xxxiv. 41), and according to Polybius gold was formerly found in this province as a great deal of the generic style comprehended under the terms Romanesque, Lombardic, and even Byzantine, of which the distinctive and characteristic feature is the
round-headed (rund bogen sty) or semiarchal. Being imported into this country immediately from Normandy at the time of the Conquest, it has obtained among us the epitet which it bears, and our examples of it are frequently further distinguished by that of Anglo-Norman. Between this and the earlier Anglo-Saxon style, however, there is no line; yet it is little more than an imaginary one, it being exceedingly doubtful whether any specimens of the latter are extant. Those examples which were assumed to be Anglo-Saxon are now admitted to be Norman; or if a distinction be made, the Norman is generally preferred.

The Anglo-Norman period of our architecture may be said to extend from the date of the Conquest to nearly the end of the following century, that is, to the close of the reign of Henry II., 1189; but there are very few buildings in this style which can be considered as Norman detached parts and features belonging to and some which mainly consist of, more or less intermixed however with what is of later date and in different style. Besides which, some of the structures which have been employed for religious purposes as far as we know them, go, furnish very little information as to the style itself, beyond what may be equally well or better ascertained from other specimens: they are so plain in themselves, and the few features which these structures do exhibit, meet with exclusive treatment of course. What is chiefly to be learnt from such examples relates only to the mode of building employed, apart from architectural style, except as far as massiveness and construction of the absence of what constitutes design contribute towards that feeling of lightness, which the name of the style, one of the principal features of buildings, namely, the castles of the Anglo-Norman period, which, however interesting they may be in other respects, offer comparatively little for study to the architect, as they seldom present to the eye more than enormous masses of brick and stone, either alone, or combined with brick, without deriving anything from the efforts of art.

A great deal of Norman work is to be met with in the older parts of several of our cathedrals, and also in many smaller churches, such as Warrington, Newton-le-Willock, Skipton, Ilkley, Oxfordmore; Steeley, Derbyshire, &c., which, having remained comparatively untouched, exhibit, although upon a limited scale, more of the Norman style and the peculiar mode of applying it than many larger edifices, cut within the region to which we are now attending. Indeed we have very little remaining to show us the style of exterior composition employed by our Anglo-Norman architects in their larger edifices. The west fronts of Rochester and Lincoln cathedrals are almost the only parts that can be considered as specimens of Anglo-Norman architecture; yet each of them has many interpolations of other styles. The lower part of the former is entirely Norman, and has a remarkably fine though not very spacious central doorway; but the large window over that entrance, in the later Gothic or perpendicular style, is so very prominent a feature, as greatly to take away from the effect that would else be produced by the details of the Norman parts. The west door of Lincoln presents, as it were, a surface decorated by small columns and arches, as is shown in the cut, p. 318, Gothic Architecture. The general form, whose horizontal outline is broken only by a few gable and loftier arches, is, heavy, nor is there anything in common between this fabric and those of the Norman churches. Wherever a superior degree of decoration was aimed at, the Anglo-Norman builders seem to have contented themselves with covering what would else have been blank surfaces with tiers of columns and arches of the kind referred to. The two transept towers of Exeter Cathedral, the front of Castle-Acre Priory, and of St. Botolph's Priory, Colchester, present little more; consequently, notwithstanding the variety as to detail, there is, as was also the case with the Greek architecture, a very great sameness as to general composition and design.

In the interiors of buildings this style exhibits itself more decidedly, owing not only to the perspective effect of a succession of spacious open arches, as in the naves of Norwich, Lincoln, and Peterborough, but also to greater size and massiveness. Although such difference of character may at first appear somewhat incongruous, it being usual to find more minute and delicate employment of parts, the reason for it is evident; the pillars and arches on the exterior of Norman structures are merely decorations of the surface, while the arches and pillars within are essential parts of the fabric. Instead of anything like lightness, we have here a most massive and solid appearance, the unceasing variety of proportions, arising from the excessive bulk of the piers from which arches spring: which character exhibits itself most strikingly when, as is the case with some of those in the nave of Norwich cathedral, the piers are merely short columns, and the latter merely country-like, mere shafts attached to a central mass of masonry. In the building just mentioned some piers of that description are ornamented on their surface by spiral grooves or flutings; and we may here remark that in that and other examples both cylindrical and clustered pillars occur, not only in the same building, but in the very same part of it, and that great variety of detail and ornament is frequently observed in the mouldings of arches, columns or posts, and their capitals, though they are uniform in size, and constitute one mass.

Owing to the large diameter required for the supports of larger arches below, the mere pillar-shape was never employed for them, for although pillars of slender proportions were introduced for such purpose, it was only as pier shafts, or when the entire pier was made to consist apparently of a cluster of slender pillars, as some of those in the nave at Durham. It is true that slender detached pillars are of frequent occurrence, but then it is only to support small arches, as were a window is divided into composed of two or more such arches, or in the triforium and other galleries within the building, where openings corresponding with the larger arches below are divided after the same fashion, and therefore do not form a continued arcade, but coupled or tripled in the main openings of the larger arches below, instead of being connected and resting upon the general capital of the pier, springing from nook-shafts or slender attached pillars, within the re-entering angles of the pier itself, the face of which was either left plain space divided by one or other of these adjoined ones, or else decorated with another shaft carried quite up to the springing of the vault, and therefore very appropriately distinguished by Whewell by the term nook-shafts. Of the latter kind, the nave of the Abbey of Danes M'ten presents an example; as the Abbye aux Hommes at the same place and the nave of Chichester give a combination of both; for there the loftier shaft does not fill up the space between the architectural region. But these small slender pillars and shafts were almost uniformly of exceedingly tall and slender proportions, we occasionally meet with pillars short 2 N 2
and stumpy and with bulky capitals, although the arches are very narrow, and the pillars themselves in situations where more delicate forms would have been sufficient. Of single columns approaching to the proportions of ancient Roman columns, like those which are found in the Lombardic buildings of Italy, our Anglo-Norman structures afford scarcely an example, except it be in that part of Canterbury cathedral called Bokett's Crown, where columns partaking very much of the Corinthian character, though somewhat bolder and more masculine, are employed as piers to support the arches (not round-head, but pointed); or they are rather coupled columns united back to back. Within crypts very short detached single columns were employed to support the arches of the vaulting, but this deviation from the usual practice would seem to have been occasioned merely by the local peculiarities of such subterraneous apartments, and consequently it can hardly be considered as characteristic of the style itself. Having spoken of the style generally, we shall now briefly describe its principal component parts and separate features, which are not very numerous in themselves, although it would occupy some space and require a great number of explanatory cuts, if we were to attempt to notice the varieties of them, because few are as the general forms, and unvaried as is the general character, the diversity of detail and minutiae is exceedingly great.

Doorways, even in small and otherwise plain buildings, and even when small in themseleves, seem always to have had a great deal of ornamentation bestowed upon them; and many have therefore been preserved in buildings, in every other part of which nearly all traces of the original Norman edifices have been obliterated by subsequent alterations. In many instances doorways are very deeply recessed, and in proportion to the aperture or door itself the dressings or decorations occupy a great space. This is likewise the case in the Gothic or pointed style; and it not only allowed great latitude in other respects, but enabled the architect to make what would else have been an insignificant feature, an important one in the design. A cut of the doorway at Ramsey Abbey is given at page 321 of Gothic Architecture, and we here introduce another specimen from Barrfreston church, Kent, which, although small, is in some respects not only of a different but of a richer and more elegant character, and will serve as an example of a square-headed door, where the arched space above it is filled up with sculpture. In this example the archivolt mouldings extend on each side considerably beyond the general recess of the doorway; which was frequently but by no means invariably the case. The chevron, or zigzag moulding, was a very favourite ornament with the Normans, both for archivolts and other decorative mouldings; but that there were great varieties of such mouldings will appear from the following specimens.

Few as these examples are, they will convey some idea of the delicacy and even elegance of the ornamental detail employed in this style.

Windows had scarcely ever much decoration; they were generally small and placed at a considerable distance from each other; sometimes, too, merely plain apertures in the wall, and rarely more than scantily ornamented. At first, Gothic Architecture, are two specimens of Norman windows, one consisting of a single opening, the other divided by a central pillar. In regard to such features, the Norman and Gothic styles differ essentially, quite as more as if not more than they do in the mere form of their respective arches; for besides that windows are secondary features in the one style, whereas they are among principal and most characteristic features in the other. Norman windows have neither mullions nor transoms, nor any tracery or open compartments in head of the arch; even where the aperture is divided into two smaller interesting upon a central pillar, the space or head between those arches and the larger one which includes them never perforated or otherwise decorated. Hence the windows themselves were necessarily limited as to size: notice that it would have been very possible to increase the number of openings by means of additional pillars, and by afterwards perforating the general head of the window above the smaller arched divisions, although not with equal consistency as in Gothic architecture, where the mouldings of the mullions are continued upwards and form the ribs of the tracery, however complicate it may be. Sufficient hints for such purpose might have been found in some of the intersecting patterns of ornament which occur among the external enrichments of Norman buildings.

By way of showing how windows were occasionally made more important external features than usual, we subjoin a sketch of one in the upper part of the tower of the Church in Normandy, where, although the apertures themselves are narrow, the external breadth is rendered very considerable by means of the numerous pillars, or mock-shafts, on each side. Handsome in its general character, such form...
of window would admit of almost any degree of enrichment, by the mouldings being carved. In the story beneath it is a narrower window, with openings not half the breadth of the others, yet very nearly of the same height, and in other respects very different; but for that we must refer to the original plate, in Pugin's 'Architectural Antiquities of Normandy,' which comprises also a very interesting section of the whole tower. We may however call attention to the steep pyramidal stone roof, which form is supposed to have afterwards led to that of the spire, in like manner as its ornaments of animals' heads and figures may have suggested the first idea of crockets. Both triple windows, and window-like openings in internal galleries, divided by two pillars into three arches, of which the middle one is wider and loftier than the others, also occur. There are also windows in this style, though narrow, of very considerable dimensions as to height, like those at the east end of Canterbury Cathedral.

As a very peculiar and interesting specimen of Anglo-Norman architecture, and for the purpose of showing how, by increasing the number of openings and pillars, windows might have been extended in this style, we here exhibit a sketch of an external staircase leading to the registry at Canterbury.

In this example there is somewhat to remind us of the open galleries of the Italian Lombardic, especially of those upon sloping lines beneath pediments [Lombardic Architecture, cuf., p. 100], with this difference, that here the arches form a horizontal line. We have here also an instance of what was by no means uncommon in small arches in this style when they are not pierced through, which is, that the inner margin of the arches is formed by a chevron moulding which scallops them.

Buttresses to which buildings in the Gothic style are indebted for so much of their character and effect, can hardly be said to exist in either Norman or Lombardic architecture. The enormous thickness of the walls and their solidity, owing to the smallness and infrequency of apertures in them, rendered such additional support unnecessary, even where the vaulting of the roof was large and bold. Hence nothing more than either buttresses, or pilaster strips (as they are conveniently termed by Mr. Whewell), were introduced, and these more for the sake of producing some variety and degree of expression than for actual strength, their projection beyond the general plane of the wall being very inconsiderable, and no more in fact than that of the corbelled parapet, or corbel-table; consequently buttress-strips do not so properly constitute projecting surfaces, as the intermediate spaces of wall form recessed compartments, or large pannels. The parapet itself was seldom more than a plain corbel-table, without battlements, except in castellated buildings; but sometimes, instead of forming a horizontal line, the lower edge of the corbel was what might be described as embattled-reversed, that is, indented like a range of battlements hanging downwards, or else made wavy, or scalloped with curves.

But the more common mode was to make the lower edge of the corbel table straight, with a series of corbel mouldings beneath it, frequently intersected by small blocks at intervals (after the manner of modillions), which were either left plain or sculptured with grotesque heads and figures. Occasionally, again, instead of the form of a series of small interlacing arches, of which kind of decoration instances frequently occur in the Italian Lombardic.

Pillars and Columns, with which the massive circular arches, or piers with neck-shafts, are not to be confounded, exhibit great diversity of character, both as to proportions and decoration, from the rudest and plainest forms to either the lightest or the most enriched. Neither are the two terms to be regarded as precisely synonymous, it being as well to observe the distinction made between them by Whewell, and to restrict the latter term, which is also termed the nobile moulding, to such pillars as approach to the general proportions and character of classic columns, as is the case with those already mentioned as being in Becket's Crown, Canterbury. Pillars, on the contrary, have very great variety of proportions, either much below or greatly above such standard. The shafts are for the most part plain, though instances occur of their being carved (as was often the case with the columns of Lombardic porches); and in the undercroft at Canterbury Cathedral there are pillars whose shafts are fluted spirally. Raised mouldings, intersecting each other spirally so as to form a diamond-pattern on the surface, are by no means unfrequent; and some of the circular arch-piers in Durham cathedral are so ornamented: zigzag or chevron lines were also employed for decorating the surfaces of piers and columns, and were disposed either annularly, in horizontal rings, or spirally. Of these and some other various specimens are here shown.

With respect to capitals, the diversity is so great as to render it impossible, at least here, to attempt to classify them, or particularly even the leading varieties: while some are both rude and plain, others are remarkable for the delicacy of workmanship and the taste shown in their enrichments: some, though they do not lack ornament, are either too poor and insignificant, while others again, though quite plain, have something pleasing in their mass and contour, and in the proportion they bear to the height of the shafts. Of the plainer sort of capitals, the most common shape of those occurring in Anglo-Norman buildings is what Mr. Whewell designates the Cushion Capital, and which is formed by an inverted cone, of course decreasing upwards towards the abacus, but intersected by four planes, producing as many flat surfaces or sides, answering to those of the abacus. This will be rendered more intelligible by the annexed examples from Rochester Cathedral, although they are instances of the cushion capital, the stem or circular part of each being left, whereby the planes or faces forming the sides become scalloped.
Of the variety of sculptured and enriched capitals, the four specimens here annexed do not go far towards conveying an adequate idea, nor are they the very best that are to be met with; nevertheless they may suffice. The first two are foreign, namely, from Jumieges and Sanson sur Rille; the others from St. Peter's, Northampton, and Stutely church, Derbyshire. The last of these is as remarkable for the Greek character of the intertwining volutes carved upon it, as the first is for its striking general resemblance to the Corinthian capital. The one from Northampton has the least to recommend it, being a very unornamented composition. Besides those in our own cathedrals, a few other examples of sculptured capitals, more curious however than valuable as studies on account of the taste which they display, will be found

in Pugin's work already referred to, but there has been comparatively very little published to elucidate architecturally the subject of the Norman style. 

Per-Arches, that is, open arches resting upon piers, as those within churches, do not materially differ in design from those which ornament doorways, except that they are not so profusely decorated, and the archivolt mouldings do not occupy by any means so much space in proportion to the width of the opening. The arches themselves being uniformly circular (though in some few cases either somewhat more than a semicircle or prolonged perpendicularly to the impost), exhibit so far no variety; still, regards the entire aperture, of which the arch itself forms the head, there is very great variety of character, according to the proportion which the heights of the supporting piers bear to the diameter of the arch, or opening between them. About twice the breadth appears to have been the average height of arches (i.e. openings) between piers; when much above that standard they may be called lofty (as the arches of the nave at Durham); and when much beneath it, they may be considered of low proporctions. Besides the difference of character thus occasioned, much is also produced both by the form and proportions of the piers themselves. A circular or octagonal pier, for instance, appears much more massive than one composed of clustered shafts, &c., though the general diameter of the latter may be the same, or even somewhat more. Though we cannot pursue this point any further, we would recommend those who feel at all interested in the subject to make such comparisons for themselves; and they will doubtless find that they will be led on to make many others, and to enter into original investigations.

As the best way perhaps of impressing on the memory the leading characteristics of Norman architecture, we shall here briefly contrast them with those of the Gothic style.

**Norman.**

- Round headed arch.
- No tracery in windows.
- Buttress strips.
- No pinnacles.
- Battlements, doubtful if any.
- Spire scarcely known.
- Splayed surface of rare occurrence.
- Niches ditto.
- Windows generally small and few.
- Horizontal lines and arrangements prevail.
- Arch-piers very massive.
- Vaulting simple and mostly plain.

**Gothic.**

- Pointed arch, varying in proportions.
- Windows with mullions, transoms, and tracery.
- Buttresses rising in offsets or stages.
- Pinnacles.
- Battlements in the ecclesiastical as well as military style.
- System characteristic features.
- System characteristic features.
- Windows spacious and numerous.
- Vertical lines and arrangements prevail.
- Arch-piers comparatively slender.
- Vaulting more complex and decorated.

Norman architecture, we may add, certainly contains many excellent rudiments and materials for a more finished style, and would no doubt have attained to greater consistency and variety, and increased in elegance and refinement, if the application of the pointed arch did not lead to a system which completely superseded it. Still it is rather singular that, in an age when we confine ourselves to no one particular mode of building, but employ Grecian, Italian, Gothic, Tudor, Elizabethan, &c., as taste or circumstances may dictate, no attempt should have been made to revive this particular style. It is true that it presents no models for direct imitation, and for purposes of modern church architecture, it would require to be greatly modified; to have much supplied, in order to accommodate it to present usage: to be purified of much unornament; to be, in a word, remodelled: still, on that very account, does it recommend itself—not indeed to those who have no other guidance but precedents—but to those who are capable of entering into a spirit, able to discriminate between its valuable qualities and its defects, to treat it with originality, and to give free scope to their own inventive powers; just as the Gothic, and some other modern German architects, have formed a style of their own, taking for the basis of it one which may be considered the parent stock of both Lombardic and Norman, namely, the Byzantine, of which the round-headed arch constitutes a characteristic feature. 

**NORMANDIE,** one of the provinces or military governments into which, before the French revolution, France was divided. It stretches along the coast of La Manche, or the English Channel, from near the mouth of the Somme, to the western side of the peninsula of Cotentin, which is included within it. It is bounded on the north and west by the sea, on the north-east by Picardie, on the east in the Ille de France, on the south-east by Perche, on the south by Maine, and on the south-west by Bretagne. It comprehended a number of subordinate divisions, which we give, adding the name and population of their chief town, according to the census of 1831.

**LA HAUTE NORMANDIE, capital Rouen.**

<table>
<thead>
<tr>
<th>Town</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Le Pays de Caux</td>
<td>2,832</td>
</tr>
<tr>
<td>Le Pays de Bray</td>
<td>3,431</td>
</tr>
<tr>
<td>Le Vexin Normand</td>
<td>3,213</td>
</tr>
<tr>
<td>Le Roumois</td>
<td>6,104</td>
</tr>
<tr>
<td>Le Pays de la Campagne</td>
<td>2,941</td>
</tr>
<tr>
<td>Le Pays d'Ouche</td>
<td>10,337</td>
</tr>
<tr>
<td>Le Pays de Louvain</td>
<td>2,118</td>
</tr>
<tr>
<td>Le Pays d'Auge</td>
<td>4,919</td>
</tr>
</tbody>
</table>

**LA BASSE NORMANDIE, capital Caen.**

<table>
<thead>
<tr>
<th>Town</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>La Campagne d'Alençon</td>
<td>14,019</td>
</tr>
<tr>
<td>Le Pays d'Houlme</td>
<td>1,673</td>
</tr>
<tr>
<td>Le Campagne de Caen</td>
<td>39,148</td>
</tr>
<tr>
<td>Le Bocage</td>
<td>18,343</td>
</tr>
<tr>
<td>Le Cotentin</td>
<td>8,643</td>
</tr>
<tr>
<td>L'Arrac'hin</td>
<td>7,583</td>
</tr>
</tbody>
</table>

Le Vexin Normand was so designated to distinguish it from that portion of Le Vexin which was in the early ages included in the domains of the crown, and entitled Le Vexin Français. The population of the five departments into which Normandie has been divided, with the exception of the arrangement of Mortagne in the department of Orne, which comprises a portion of the county of Perche, was, as
1831, 2,526,018. The greatest length of the province, from north to south, is 110 miles; the breadth, at right angles to the length, from Cape La Hague or La Hogue, at the extremity of La Cotentin, to the neighbourhood of Domfront, is 110 miles; the province is estimated at 11,200 square miles, giving 225 to 227 inhabitants to a square mile, a density of population far above the average of France. This area is nearly double that of Yorkshire.

A detailed description of the country is given under the departments of its several families, or, in northern parlance, its dukedoms, viz., Normandy, Anjou, Maine, Touraine, and Touraine. Normandy contains no great elevations, except in the south, where it is traversed by the eastern prolongation of the Armoricen chain of hills, and in the west, where a branch of that chain extends through the Cotentin. It is bounded on the east side by the Seine and its tributaries the Eure and the Risle; in the centre by the Orne, Dives, and Touques; and in the west by the Douve, Vire, Seé, and Celune. The climate is moist and temperate, and the soil produces abundantly all sorts of grain; apples are grown in great quantity, from which are made cider and perry, the common drink of the peasantry, who grow no wine. The meadow and grass lands are extensive and excellent, and afford pasturage to numbers of cattle and horses. The tables of population are very unequal; within the limits of the Normandy county, they are considerable, and several important towns. Manufactures are common, especially of cotton; and along the coast are the ports of Dieppe, Le Havre, Honfleur, Isigny, Cherbourg (for the navy), and Granville.

The country which afterwards constituted the duchy of Normandy was, in the earliest period of Gallic history, inhabited by a number of Celtic nations. The Baiocases, viducasses, Lexovii, and Aulerici Eburones inhabited the districts now chiefly comprehended in the departments of Calvados and Eure; and their territories comprehended the following Celtic or Roman towns:—Baiocases—Arregeus, afterwards Bayeux (Bayeux), and Grannona (Port-en-Bessin); on the coast near Arregeus; Viducasses—Viducasses (Vidocq); Lexovii—Calvaires (Calvaires) and Lexovii (Lisieux), and Breviodurum (Pont Audemer) on the Risle; Aulerici Eburones—Mediolanum, afterwards Eburones (Evrux), Condait (Condu sur l'On) above Evrux, and Uppage (Pont de l'Arche) on the Seine. The other smaller towns are not noticed elsewhere. [MANCHE; ORNE; SAINTE INFÉRIEURE]. These nations were all included in the Roman province of Lugudunensis Secunda, which nearly coincided with the subsequently established duchy of Normandy, and of which Rotomagus (Rouen) was the chief town and capital. Gaul was, at the time of Clovis, the empire, conquered by Clovis (a.d. 497-500), and incorporated by him in the kingdom of the Franks. In the division of the Frankish territory among the sons of Clothaire L., it was included in the kingdom of Neustria, which, under the influence of Clovis' policy, extended itself to the Loire, the middle of Champagne, and the frontier of Brittany. On the etymology of the name Neustria scholars are not agreed; it seems to include the same element as our own word 'west' and the High German 'Osten,' with the addition of the initial consonant 'n.'

In the attacks of the Northmen or Danes on France, Neustria had its share of the general devastation. Among the most formidable of their chieftains was Rollo or Rollo, who was of the Scandinavians (a.d. 908). He ravaged the north and the south of France, the Low Countries, and England; and in a.d. 911 he led a numerous army from the last-mentioned country to the siege of Paris. He extended his ravages in every direction; and though he experienced some defeats in which he was himself almost taken in his own camp by Paris, he received, from the weakness or policy of Charles le Simple, king of France, the hand of his daughter Giselle or Giselle in marriage, with the cession of an extensive province, to be held as a fief, on condition of his ceasing to ravage the rest of the kingdom. The of this marriage and making profession of the Christian religion. The ceded province was north of the Seine, and extended from the Rpte to the sea; it became the duchy of Normandie, so called from the Northmen, or (to give them their more familiar designation) the Normans (in French, Normands), which was then possessed by the Church. The transactions that occurred at the conference held for confirming the treaty is indicative of the situation and character of the parties. Rollo, having refused to kneel before the king and to kiss his feet in recognition of his sovereignty, is said to have sent 100 soldiers to perform for him these acts of homage. The rude soldier, seizing the king's foot, handled it so roughly as to overturn him from his chair, amid shouts of laughter on the part of the king and his courtiers, and a prudent silence on the part of the French attendants. As the province had been utterly wasted by the ravages of the invaders, the counts of Dol and Rennes in Bretagne were pledged to furnish provisions to the new settlers; and the king ceded to Rollo his claims to the part of Bretagne which had ceased to recognise the authority of the crown of France.

The conversion of the northern pirates into cultivators of the soil which they had previously ravaged, is one of the remarkable historical features of the dark period which succeeded the downfall of the Western empire, and in which instance was the change more striking and more complete than in the case now before us. Much is doubtless to be ascribed to the personal character of Rollo, who appears to have possessed qualifications far beyond those of an ordinary sea-king. He introduced the feudal system in a completeness and regularity to which it had not attained in those parts where it had been the growth of many years and of various circumstances. The first fiefs granted by him were to some of the churches of his duchy, the rest of the feudal system,

* His name is variously written—Rold, Ruo, Ruol, or HARVIL. He is also called Robert.
Guillame (William I), called Longue Épée (long-sword), was the successor of Rollo. He contracted alliances by marriage with some of the most powerful of the French nobles, and gained several advantages over the Breton chiefs who opposed him. He received from Raoul or Rodolphe, king of France, the cession of Le Cotentin and L’Avranchin, which he added to his dominions. He had a principal share in the restoration of Louis IV. d’Outre-mer to the throne of France; but in the civil disensions of France, he forsook his party for that of Othon or Otho the Great of Germany, rival of Louis. He returned however to his allegiance (a.d. 942) after a time, and was reconciled to the monarch; and thereby founded an agreement with Normandy, and secured the person of the young duke, whom the Normans, not without some distrust, allowed him to convey to Lothar, that he might be there brought up in a manner befitting his rank and prospects. Hugues, duke of France, shared in this interference in the affairs of France; and both he and Louis justified their intervention by urging the necessity of excluding the pagan guards, and diminishing their influence and that of the other adventurers who had arrived, during the ducal reign of Guillaume, from the Norman country. The duchy was, however, left to the descendants of medieval France, and the Norman dynasty assumed the character of a partially religious character. Louis of France, involved in a harassing contest with his vassals, and especially with Hugues, sought to make up his quarrel with the latter by an agreement of general peace; and these two, uniting their forces, attacked the duchy one side, while it was assailed on the other by the Bretons, who gladly seized so favourable an opportunity of overthrowing the Norman yoke. The address and perseverance of Bernard the Dane, regent of Normandy, triumphed over these difficulties. He drew off Louis from his agreement with Hugues, and called in Harold, or Aigrolph, king of Denmark, to the support of Richard, who had been delivered from his virtual captivity at Lothar by an adroit stratagem, according to which a bishop (a.d. 943) was short-sold to the Normans, and detained captive at Rouen by Bernard, in consequence of an affair between his attendants and those of Harold, and obtained his release, on conditions highly favourable to the Normans, only to pass into another captivity in the hands of Harold. In 944, the same year in which the Normans lost their chief, let him go. He remained a year in this second captivity, and his release (a.d. 946) was soon followed by a renewal of the war, in which Richard and Hugues were in alliance against Louis and his supporters. In this warfare Richard grew up, signifying his courage and obtaining thereby the distinguishing epithet of Saus-peur. Louis (a.d. 954) and Hugues (a.d. 956) died leaving their children minors; and the obscure annals of the following years present little worth of note.

In the reign of Lothaire, son and successor of Louis IV., new attempts, either by treachery or force, were made on the person and dominions of Richard (a.d. 963), who, resorting for assistance to the king of Denmark and obtaining the signal support of the ancient and barbarous soldiers of his country, followed the ravages of the Normans, and attempted to subdue and to subdue and overawed by Robert, whose character and exploits obtained for him the twofold epithet of Le Magnifique and Le Diabol (the Devil). He had to struggle against the rebellion of his vassals, who were encouraged to resist him by Richard (a.d. 967), the son of Robert, the greatest of his son, by his wife, the Countess of Flanders, who had been reduced to or retained in an inferior condition by the settlement of the Northmen under Rollo, and of those who had subsequently emigrated from other parts of Europe, determined on claiming an equality of privilege and status with their northern conquerors. In this resolution nothing more is discernible than the impatience of degradation and wrong, and the sentiment of national independence, which distinguished other popular outbreaks of this and subsequent periods. The singularity of the proceeding consists in the deliberation and caution with which it was conducted.

The Normans were held in each county of the duchy, and the two deputies were appointed by each to meet in a general assembly in a central place, to maintain their pretensions to perfect equality with the dominant race. The plan was however discovered. A band of soldiers, despatched by the king, surprised the general assembly at the time when the deputies and others of the peasantry, and causing them to be massacred by cutting off their hands and feet, sent them home to strike general terror. The design was abandoned, and the peasantry resigned themselves to a peace against which they deemed it vain to struggle (a.d. 997).

The reign of Richard II. is also remarkable for the first establishment of a connection between the affairs of Normandy and England, then governed by Ethelred II., who was most solicitous of securing Normandy, which was the inheritance of Svein, the son of Harald Harefoot, king of Denmark, whom Richard, after a most remarkable event marked this reign. Robert, a Norman cheftain, whom he had some complaint against Richard, proceeded with many companions to Rome, in the double character of a pilgrim and an appellant to the authority of the pontiff. The Norman adventurers who remained under the care of Richard, who however took active measures for asserting the claim of his nephew against the Danes. Emma herself married Canute the Dane, and the Danish opinion of the crown was totally reversed.

Another remarkable event marked this reign. Ethelred, the king of Denmark, and Robert, the son of Ethelred, perished at the hands of the Normans. Roland, a Norman cheftain, whom he had some complaint against Richard, proceeded with many companions to Rome, in the double character of a pilgrim and an appellant to the authority of the pontiff. The Norman adventurers who remained under the care of Richard, who however took active measures for asserting the claim of his nephew against the Danes. Emma herself married Canute the Dane, and the Danish opinion of the crown was totally reversed.

The reign of Richard II. was remarkable also for a Norman knave, who had succeeded his father, Hugues Capet. He was engaged in various struggles with the other powerful nobles of the kingdom; in his contest with Eudes II., count of Chartres, and the Bretons, who were engaged in a dispute over the lands of the former, he was defeated and despoiled. He was succeeded by his son, who died without issue, and his succession was contested by his brother, who had a better title, but was defeated and driven into exile. He was succeeded by his son, who died without issue, and his succession was contested by his brother, who had a better title, but was defeated and driven into exile. He was succeeded by his son, who had a better title, but was defeated and driven into exile. He was succeeded by his son, who had a better title, but was defeated and driven into exile. He was succeeded by his son, who had a better title, but was defeated and driven into exile. He was succeeded by his son, who had a better title, but was defeated and driven into exile.
and the Oise (Le Vexin Français). In 1034 Robert equipped a fleet for an expedition to England, in order to restore Alfred and Edward (afterwards the Confessor), the children of Ethelred II. by Emma, to the throne of their ancestors, then usurped and occupied by Canute the Dane. The two was supported by the lairds of Normandy. Robert, changing the direction of the force he had gathered, sent it into Bretagne, and compelled Alain or Alan, who then held that duchy, to do homage to him. Robert shortly afterwards set out on a pilgrimage to the Holy Land, after having treated with his nephew William the Bastard, a boy of eight years, to the fidelity of his nobles; and died at Nicea in Bithynia, a.d. 1035.

Guillaume (William) II., known at first, from the illegitimacy of his birth, by the surname of 'the Bastard,' afterwards, and by his son William II. of France, of the most inglorious designation of 'the Conqueror,' had, before his father's departure, taken to the court of Henri I. of France, and entrusted to his care. On the death of Robert, Henri took him to Rouen, and established him in possession of his father's domains, except Le Vexin Français, which in the time of his own difficulties he had given to Robert as the price of his aid, and which he now retained. The tender age of the young duke, and the stain attaching to his birth, occasioned the jealousy of the barons of the Normanhouse to dispute his claim or to rebel against his authority. Guiod, or Gu, count of Macon, grandson, by his mother, of the duke Richard II., was his most formidable competitor; and the Norman nobles, embracing one side or the other, and differing (a.d. 1066-1067) in their private quarrels, fortified their castles, and spread the fumes of war throughout the duchy. The desolation caused by these and similar feuds, not only in Normandy, but in all parts of France, led the clergy to attempt the establishment of a hierarchy of the Church, which was to be defended by the dukedom of Normandy, as the true of God, they secured certain periods of time, and portions of territory, and classes of persons, from the violence of warfare, their benevolent aim was more successful. The barons and troubadours, who had been during the minority of Guillaume, whose courage, steadfastness, and vindictive character, were developed and strengthened by the scenes amid which he grew up. His ducal rank was preserved during his minority by the influence of his wife, and by his own power; but as he approached manhood he was enabled to maintain his authority; and in a victory, obtained at Val des Dunes, between Caen and Argentan (a.d. 1047), he crushed his most formidable competitor, Guiod of Macon, who, having renounced the Norman cause, had left the duchy to his successor. Henry I. of France was present at this battle, with an auxiliary force of 3000 men, on the side of Guillaume. By the consequences of this victory, and of subsequent advantages which he obtained over his assailants, Geoffrey Martel, count of Angoulé (a.d. 1048), and Guillaume, count of Arques, an illegitimate son of Richard II. (a.d. 1054), the power of Guillaume was so far consolidated as to lead him to extend his ambitious views to foreign lands, and especially to the British Islands.

In 1055, Ethelred II., king of the Anglo-Saxons, died, his wife and children returned to Normandy, where the latter grew up, and remained, until one of them was invited into England, where he was murdered, and the survivor, Edward the Confessor, was elevated (a.d. 1042) as king of England. Count Henry of Godwin, to the now vacant throne of that kingdom. Edward was in manners, language, and affections a Norman rather than a Saxon; and his reign of twenty-three years (a.d. 1042-1066) was chiefly occupied by a struggle with his brother-in-law, William the Bastard, the son of Eleanor, the king's sister, who having rebelled himself, and the Anglo-Saxon or native party under Earl Godwin and his sons. [Harold II.] This predilection of Edward for his Norman relations and friends encouraged the ambition of Guillaume, who visited England with a large retinue, or entourage, at the time of the predominance of the Norman party. 'As he journeyed through the land of the English,' says a modern writer, 'the Duke of Normandy might have believed for a moment that he was still in his own territories.' The defeat which he found at Dover was commanded by Normans; and at Canterbury some Norman soldiers composed the garrison of a fort built on the declivity of a hill. Crowds of Normans came to salute him in the dress of captives or prelates. Edward's favourites came to pay their respects to the chief of their native country; and, to that day, the English found their natural lord. William appeared in England more like a king than Edward himself; and it was not long before his ambitious mind conceived the hope of becoming so without difficulty at the death of this man, whom he found a slave to the feeble influence of his brothers. [Terci. ii. 31.] The fluctuations of the struggle between the parties at the English court do not belong to our present subject; and the events which led to the accession of Guillaume to the English throne are described elsewhere. [Harold II.] Guillaume, who had supported the cause of William against Guillaume, and he subsequently (a.d. 1058) attacked Normandie, but without success. A peace was concluded next year, and continued for the remainder of the reign of Henri, and a portion of the reign of his successor Philippe I. During the troubles of Anjou, the succession of which was disputed, and while Bretagne was torn by internal dissensions, Guillaume seized his opportunity, and wrested the suzerainty of Maine from the rival counts of Anjou. He granted these, except Ille et Vilaine, and had gained some advantages (a.d. 1065) a year before his expedition to England. He set sail for the conquest of England from St. Valery-sur-Somme on Michaelmas-day, a.d. 1066. A revolt of the people of Le Mans, who afterwards submitted among the number of his followers, caused the strokes of ranging spirit and importance of the inhabitants of towns; and led, though unsuccessful in its immediate object, to the formation of municipalities in most parts of France. Troubles of greater extent followed. Guillaume had, soon after the conquest of England, during a fit of ill humour, signed his eldest son Robert as his successor in the duchy, and caused the Norman grandees to do homage to him as their duke; but on his recovery, he had not only refused to deliver over to Robert the government of the duchy, but actually exiled him from him, and afterwards granted to him as his wife's dowry. According to other accounts, William, on setting out for the conquest of England, had engaged to Phillip, king of France, in order to maintain his consent that the Duke of Normandy might succeed to the throne of France the restitution of Le Vexin Français, which had been withheld from him by Henri I. Philippe refused: war ensued, and an accident which occurred in the course of it led to the death of Guillaume, after he had governed the duchy of Normandy thirty years. On the death of Guillaume, Robert became duke of Normandie, and returning from exile, took possession of his inheritance. He made a vain attempt, by means of his partisans, to possess himself of England, which had fallen to the share of his next brother Guillaume le Roux, or William Rufus or the Red (a.d. 1088). The misconduct of Guillaume and the intrigues of his brothers, excited general discontent in Normandie. In the universal confusion, the people of Le Mans and the county of Maine again revolted; and the citizens of Rouen, of the party of Guillaume, introduced a body of the troops of that king within their walls. The citizens and their auxiliaries were however defeated by Henri, count of Coutes and Avranches (a.d. 1087), who afterwards attacked the capital of the Conqueror's sons, who, on this occasion, supported Robert (a.d. 1050). Guillaume soon after landed in Normandie; and he and Robert made up their quarrel, and uniting their forces, deprived Henri of his two counties and all that he had obtained by his exile in 1091. Thus was the dispute between them, and Guillaume returned home. The weakness of Robert encouraged the licentious violence of his barons, and Normandie continued to be the scene of confusion; until the duke, eager to engage in the first crusade, pledged his dominions to his brother to the sum of a money, and embarked for the Holy Land (a.d. 1096). Guillaume, thus possessed of the duchy, renewed the contest with Philippe for the possession of Le Vexin Français, and sought to recover Maine, but his projects were cut short by death (a.d. 1105).
The death of William and the absence of Robert gave opportunity to Henri to seize the throne of England; but his hands were too full to allow him to make any attempt on Normandie, which quietly submitted to the dominion of Robert on his return (a.d. 1101) from the crusade. In 1102, at the invitation of his partisans, he rebelled in England, and attempted to dispute the crown of that kingdom; but seeing little hope of success, came to an agreement with his brother, and returned.

The political necessities of Henri obliged him to leave Robert for a time in possession of Normandie, which, under his rule, was turned into a monarchy and dynasty. But as Henri gained stability, he began his encroachments on his brother, whom (a.d. 1106) he assailed with an army of Anglo-Normans. The discontent of Robert's subjects favoured his designs: he took Bayeux after a stout resistance, and the town of Cassel was surrendered to him, but Flanders joined Tincbebray resisted. The two brothers engaged in conflict under the walls of the last-named town; Robert was defeated and taken, and an English army conquered Normandie, as, forty years before, a Norman army had conquered England. Robert died, after a long captivity, a.d. 1134. [HENRY I.]

Henri governed with vigour the country which he had unjustly acquired. He put a stop to internal warfare, resumed or compelled the restoration of many grants, and by his energy and clemency he gained the confidence of his people. In a time of discord was wrested from it, and regained possession of all that had belonged to his father. His attempts to possess himself of the person of Guillaume, son and heir of Robert, who took refuge in England, were resisted; mutual discontents and distrust between him and Louis VI., Le Gros, king of France. The counts of Flanders and Anjou allied themselves with Louis, and war broke out (a.d. 1108), and continued for two years. After a short contest, Anjou was taken again (a.d. 1110) by some of some Norman lords added to the difficulties of Henri; but he managed to draw the count of Anjou over to his side: the count of Flanders was dead, and he forced Louis to conclude a disadvantageous peace (a.d. 1114).

The death of Robert, of whom Guillaume was an apt and compassionate son and heir, caused the Norman lords to revolt. Louis and the young count of Flanders embraced the party of Guillaume, and attacked Normandie, but without success (a.d. 1117). The count of Anjou having joined their party, they renewed their attack; the Norman lords revolted (a.d. 1118), and Henri seemed on the point of losing the duchy; but a succession of favourable events enabled him to regain the superiority, and by the mediation of Guillaume's wholly devoted rival, Louis II., peace was restored (a.d. 1120). New discontent and troubles broke out after the death of Guillaume, the only legitimate son of Henri, who was drowned in his passage from Normandie to England (a.d. 1120). It is likely that this discontent was caused or augmented by the fear that Normandy and England would become mere provinces of Germany by the marriage of Maud, or Mathilde, daughter and heiress of Henri, with the emperor of Germany, Henri V., which had taken place a.d. 1114, when the princess was only ten years old. The king of England however obtained the recognition of his daughter as heiress to England and Normandie, and after the death of her husband the emperor (a.d. 1125) married her a.d. 1129, notwithstanding the repugnance of his nobles, and of Maud herself, to the son of the last Duke of Anjou, Geoffrey Plantagenet, who succeeded, by the abdication of his father, to the county of Anjou and its dependencies, in the same year in which the marriage was celebrated.

The death of Guillaume, son of Duke Robert, and claimant of Normandie (a.d. 1129), seemed to give the greater security of Henri's cases, the quiet succession of his daughter. But notwithstanding this favourable event, his latter days were embittered by the quarrels of himself and his daughter with Geoffrey of Anjou; and on his death (a.d. 1154), his cases were not concluded by the death of Anjou, Geoffrey Plantagenet, but by the marriage of his eldest daughter to Stephen, count of Boulogne. Usurpation led to civil war, and both England and Normandie suffered from a long series of hostilities, and from the consequent social disorganization. Geoffrey and his allies, with a powerful army, invaded the duchy, defeated the duchy and Normandie, and the county of Anjou; and the hostility of the people, who were disposed to recognize him; and the resistance of the peaceability, and a wound which he received, led to his retreat. Etiennes passed over from England to Normandie (a.d. 1157), and did homage to Louis VI. for that duchy; but he too dispossessed his subjects and returned to England, and the duchy remained without a master until a.d. 1144, when it was conquered by Geoffrey, who, in his turn, did homage for it to the king of France. Louis VII., and Maud, who was crowned a government having more than nominal until a.d. 1151, when Geoffrey died, and was succeeded in his Anjevin and Norman states by his son Henri, afterwards Henry II. of England.

Henri had indeed been invested with the rights of the duchy of Normandie by the death of his nephew, and the recognition of his investiture by the king of France had been purchased by the cession of Le Vexin Normand.

In a.d. 1152 he married Elenore, duchess of Aquitaine, from whom Louis VII. of France had just been divorced. The union of a power which had been dissipated by the division of Anjou, and Aquitaine, rendered his power superior to that of the king of France: he managed to break up a hostile league formed against him, restored to his domain many fiefs which his father had alienated, repressed a rebellion of the Anglo-Normans. This was the result of the policy of his father, who, in 1163, brought to its acme by his succession, on the death of Elenore, or Stephen, to the crown of England. His right to Anjou was disputed by his younger brother Geoffrey, on the ground that his father had bequeathed it to him. This is the true statement of the matter; but the pope absolved him from the obligation of his oath: the king of France, who had undertaken Geoffrey's cause, was won over by his address; and the deposed prince was obliged to content himself with lands unfortified and a person from his brother (a.d. 1156).

The talent and ambition of Henri, his extensive plans of aggrandisement, his struggles with Louis VII. of France, and his memorable contest with Becket, are recorded in his place. We have not, however, the history of his part in the events which transpired in England during his reign, for he was involved in that of the sovereign. In 1166 Henri invested his eldest son (also called Henri) with the duchy, but did not admit him to the administration of the government, and this constituted one of the grievances alleged by the English against the king. But the will of the king of France, who supported him, besiegued Rouen, which was a gross breach of faith, he was on the point of taking (a.d. 1174). The arrival of Henry with a strong body of Englishmen, or mercenaries (whose employment was gradually preparing the downfall of the feudal system, compelled him to raise the siege, and peace was soon after restored. Henri died in 1189, worn out and broken-hearted by the ingratitude and perpetual rebellions of his children. His eldest sons, Henri and Geoffrey, had preceded him to the tomb.

Richard Cœur-de-Lion or the Lion-hearted succeeded his father in Normandie as well as in England. He had, before his father's death, and while in rebellion against him, done homage to Philippe II. Auguste, king of France, for the duchy of Anjou, and the county of Flanders, which, having passed to his brother, was restored to the king of France. He was crowned as duke of Normandie after his father's death and before his own departure on the third crusade. [RICHARD I.] During his captivity in Germany the duchy was attacked by the king of France, who took several towns but failed in his attempt to conquer the duchy (a.d. 1191). The treaty of Prince Jean or John, Richard's brother, assured him a fair prospect of wresting the duchy from its rightful owner, but the release of Richard and the double treachery of Jean frustrated his plans, and a petty yet destructive war ensued, which, though interesting to the two kings, and by some subsequent temporary suspensions of arms, continued till the death of Richard (a.d. 1199), an event which happened in the course of an obstinate struggle, but which left the duchy in the hands of the most important character, especially to Normandie.

The duchy of Normandy was now fast approaching the term of its existence. The conquests and other acquisitions made by its rulers had in reality impoverished and weakened the duchy. The fall of Normandy was, in fact, the beginning of the end of the feudal system, which was in course of decay, and the invasion of England, directed to the confirmation of its successful dominion over that kingdom. The weak and unsteady rule of Robert, his eldest son, prevented a separation which might have prostrated the power and the existence of the duchy, and thrust the government into the hands of Henri I., who entertained a jealousy of the native Normans, and limited his favour and confidence to Anglo-Norman and Breton clamhians. The extension of the dominions of Henri II. divided his attention, and provoked gentry
The dominions of Richard passed into the hands of Jean, or John, his youngest brother; but his claim was disputed by Artur, or Arthur, duke of Bretagne, son of Geofoz, the third of the House of Jure II. The doubt of the majority of Artur's claim; but his tender years prevented his availing himself of it; and Jean, who showed more vigour and address in his usurpation than at any other period of his life, established his power with little difficulty (A.D. 1199). Philip, however, is thought to have been so afraid of Ashkamin; he abandoned it for awhile in a treaty with Jean (A.D. 1200), took it up again in a subsequent quarrel which he had with that prince. The capture of Artur (A.D. 1202), and his subsequent assassination by Jean at Rouen (A.D. 1218), put an end to the struggle. The Crimean war cost the French crown.

Jean his duchy; general indignation was excited by it: Philippe overran the duchy and took the strongest fortresses, not indeed without a brave resistance. Jean fled to England, and his subjects, abandoned by their prince, hastened to espouse the cause of Henry. Philippe overran and subjugated, and Normandie finally passed into the hands of the French king. Philippe accused Jean before the peers of France of the murder of Artur; and though such a treachery committed by so powerful a prince, was not punished by a vassal against his suzerain, procured a sentence of forfeiture against him, by virtue of which the duchy was ever after united to the crown of France, though the legal act making it perpetual to that crown was not established until the second of June 1368.

In the wars of the English, under Henry V. and VI., Normandie came again into their hands, and was almost the last portion of France which they retained. They no longer however held it as a feudal duchy, but as a part of the kingdom of France. The last French who habitated the country was at the little town of the Brivicken, a short distance below the town. This inlet is about 32 miles long, with a breadth varying between half a mile and two miles, and has depth enough for middle-sized vessels, which may sail up to the town. Norrköping is built on the shore of this inlet, which is about 150 yards wide and about 500 yards long. The town is generally straight, though the town stands on undulating ground; the houses, partly of wood and partly of stone, are only two stories high, but have a neat appearance. Among the public buildings none are distinguished for architectural merit except the town-hall. The manufactures are numerous, though commonly on a small scale. They are chiefly those of woollen cloth (of which in 1831 not less than 342,922 ells were made), in brass, which occupies more than three hundred workers, in stuff, and paper. Several vessels are annually built. The manufactured goods supply the most important articles for exportation, but they go only to the other towns of Sweden, especially to Stockholm. Iron is also an important article of export, as well as the iron wrought in Sweden. The government has set up free-schools for the lower classes and two for orphans. The Jews are permitted to settle in this town, and have a synagogue.

Norrköping is situated in the district (län) of Linköping. Schwab's [throughout the sättliche und sättliche Schweiz] is the seat of the Gothenburg-Yokle Field, an important part of the Norwegian Range, and is situated in the district (län) of Linköping. It is known to the German and Swedish public by the name of Schwab's Reise durch das sättliche und sättliche Schweiz.
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The eastern declivity of the Norrskafjellien may be considered to commence about 100 miles from the western coast, near 8° E. long. This slope is much less rapid than the western, occupying about 50 miles in width, and descending in this space 100 feet. Its surface is usually only broken, consisting of precipitous ridges, which have flat and sometimes extensive plains at their tops, and of deep narrow valleys. Though a few of the ridges, as the Halving Skarven (4365 feet), the Gousta Field (5522 feet), rise above the line of the snow-line and a large proportion of the descendings of the lower mountains are covered with extensive woods, and the largest and best portion of the timber exported from Norway comes from this region. But the valleys are generally too high for cultivation, though they supply good pasture. Many of the valleys are occupied by deep and extensive lakes, especially near the beginning of the descent. Several of these lakes are from 2000 to 3000 feet above the sea-level.

The highest part of the Norrskafjellien is situated at the innermost rees of the Sogn Fiord, and is known by the name of Hurungeren. Its surface is covered with snow nearly the whole year round. The Skaugstols Tind, which is 7647 feet above the sea, is the highest summit of this mountain-mass which has been measured. Continued to the Hurungeren, on the north-west, is the Sogn Field, which is somewhat lower; but west of the Sogn Field lie the Joustedal, or Snee Brien, an immense sheet of perpetual snow and ice, covering a surface of more than 600 square miles. South of the largest of the large snow-fields which surround the Finsen Aarhorn and the Jungfrau do not occupy more than 200 square miles. The elevation of the Snee Brien is not known, but it is at the lower parts do not descend below 6000 feet, and that the more elevated portions attain more than 10000 feet above the sea. From the sides of this mass descend glaciers, which terminate in several lakes at their base.

The Folge Follen is another remarkable and elevated mountain-mass; it is situated on the southern shores of the Hardanger Fiord, and partly occupies the peninsula formed by this long frith and one of its branches, the Sore Fiord. The mass of ice covering its summit extend 25 miles from north to south, and about 10 miles in average width, so that they occupy a surface of 250 square miles. Its elevation is stated at 5247 feet, but as glaciers descend from the sides to a height of only 2000 feet above the sea-level, the summit must rise above the snow-line, as no glaciers can descend from which is not always covered with snow. Its elevation consequently must vary somewhat, and certainly in 60° N. lat. must occur at a lower elevation than 5000 feet. We suspect the latter to be the case. From this glacier ice is brought to London when there has been no frost in England this winter.

The most northern portion of the Norrskafjellien is the Dove Field, in the southern and highest part of which is the Snee-hatten (snow-hut), which rises to 7489 feet above the sea, and more than 3000 feet above the mountain plain on which it stands. The northern lower parts of the Dove Field approach the entrance of the Trodheim Fiord or Bay of Trodheim.

The mountain plains of the Norrskafjellien terminate with the Dove Field. East of 16° E. long, the rocky masses do not extend in plains, nor do they constitute a continuous range; still the country between 61° 30' and 63° N. lat. and between 16° and 11° 30' E. long, is a mountain region, its surface being in general more than 2000 feet above the sea-level, and there being only a few valleys which sink below that elevation. Its surface is exceedingly broken, and presents a continuous succession of ascents and descents. Neither the mountains nor the mountain ranges occupy a large space; mountains generally extend from north to south, in the direction of the whole system, but they rarely continue for a few miles without being broken by deep depressions. Still more rarely do their summits present a species of landscape that is somewhat characteristic of Norwegian mountains.

The most elevated of these is the Dovre, a mountain rising on the borders of the lake of Ringedalsvatnet, which is however widened towards the border of the mountain-region so as to become narrow valleys, and to admit cultivation, which even extends on the declivities of the mountains in some elevation. The whole region is wooded in great measure, and the eastern declivity of the mountain-plains. Several of the mountains rise above the line of trees, but only a few attain the snow-line. The Trof Jellet (near 62° N. lat.) is 5593 feet, and the Syllfjell (near 63° N. lat.) is 5641 feet.

The scanty population of the countries adjacent to the Norrskafjellien, and the great facilities for communications by sea, account for the small number of roads which traverse this extensive mountain region. Only two roads are built for the purpose, and they between the principal towns of Norway, Christiania and Bergen. It runs from Christiania northward, skirting the eastern shore of an extensive lake, the Rand Fiord, at the northern extremity of which it turns west, and begins to ascend the eastern mountain-mass, which it overtops in a bare upland in a depression lying near 61° N. lat., between the Hurungeren on the north and Mount Sule Tind on the south. The highest point of the road does not much exceed 3000 feet above the sea, from which elevation it descends to narrow valleys, and is occupied by deep and extensive lakes, especially near the beginning of the descent. Several of these lakes are from 2000 to 3000 feet above the sea-level.

The most frequented road, as it appears, is that which in the deep depression of the mountains between 63° 30' or 64° N. lat., which divides the Norrskafjellien from the Sogne field, the mountains rise so high that they bring their produce to the harbour of Trodheim, or preference to taking it to the harbours on the Gulf of Bothnia. It runs from the town of Orsund in Orsund Lade on the northern side of the lake of Storson, and after passing the southern base of Mount Olen, it descends 6000 feet above the sea-level, it traverses the boundary between Sweden and Norway, and its highest level is west of Stalstugan, where it is little more 2000 feet higher than it descends in the valley of the Suel Fiord to the western extremity of the mountain-region, where it continues to the town of that name.

North of the depression in which this road lies begins the Kilen mountains, or the northern part of the Scandinavian range; they present a different character, forming a cal...
unnous range, which in general occupies a space of twenty-five miles in width. Between 64° and 65° N. lat. the range extends to the north of the Alten Fiord, but farther north it runs north-east, and towards its northern extremity at 69° 30’ lat. east-north-east. Between 64° and 65° N. lat. nearly the whole width of the mountain mass lies within the territories of Norway, but farther north, up to 69° N. lat., it extends across the borders between Norway and Sweden. Here the watershed constituting the boundary-line between these countries. Further north the Kjölen mountains belong to Norway, except a small tract along the upper course of the Muonio river, which is under the dominion of Russia.

South of 66° N. lat. the highest ranges is in the middle. It does not generally rise to a great elevation, though always above the line of trees; a few isolated summits are always or nearly always covered with snow. The declivity towards the east is not very steep, descending, in a distance of about four miles inland; to the north of the base of the mountains, which is about 2000 feet above the sea-level. The lower offsets of the range extend however farther eastward to a distance of about 20 miles; they are commonly below the line of trees, and the valleys embossed, rising to more than 4500 feet, and generally covered with woods. The western declivity is exceedingly steep and broken. It descends, in a space of ten or twelve miles, from an elevation of about 4000 feet to the level of the sea. Rugged and precipitous masses of rock, exceeding 1000 feet, are often isolated, or covered with heath and lichens, and sometimes with brushwood, but the valleys contain forests of fine timber-trees, especially that of the Nansen-elf. The elevated rocky masses extend to the very shores of the sea, which consist of a succession of deep inlets and projecting headlands. The Folden Fiord penetrates seventy miles into the rocky masses.

North of 66° N. lat. the high mountain-masses rise to a greater elevation, and occupy a much larger space. Noteworthy is the lofty mass composed of nearly every part of the folden mass, and always covered with snow. The highest of these snow-capped summits is the Sulkeltaja, near 67° N. lat., which is 6155 feet above the sea. Here also the eastern declivity is not so steep. There is a considerable elevation of the lower parts towards the west however the high mountain-masses preserve a great elevation to the very shores of the sea. Cape Kunnen, near 67° N. lat., consists of rocks which rise in perpendicular precipes to the height of 1000 feet, and at a distance of about four miles inland; they attain an elevation of 4000 feet. The whole rock is covered with perpetual snow, the glaciers extending on the south side to the very edge of the sea. This shows that the snow-mass by which this glacier is fed must be very extensive. No glacier extends between the Jestedals Brien and Cape Kunnen. Other parts of the coast are less elevated, but in several places the mountains near the coast rise to 3000 feet.

The islands, which are numerous along the coast, must belong to the Atlen Fiord and the laked Enars is Mount Poldeva, an isolated height, rising to 2130 feet, but not above the region of the birch. Farther east every trace of mountains disappears. This region is somewhat more favoured by nature than that south of Yække Field. It is true that the Poranger Fiord and the bays east of it, being open to the northern and eastern gales, do not admit any kind of cultivation: but on the Atlen Fiord, which is sheltered against these winds by the elevated islands lying before its entrance, barley and potatoes are carefully cultivated. The trees attain a considerable size, though this place is in 71° N. lat. It is the most northern place on the globe in which grain is grown.

The Scandinavian range consists mostly of primitive and tertiary rocks: granite rocks occur very rarely. Granite constitutes by far the most prevalent component of this range. Granite is not frequent; it appears, like the other primary rocks, in some degree subordinate to gneiss. The transition formation is mostly composed of gneauwacke, amphibolite, and quartzite, and gneiss. This range is rich in metals. Iron occurs in immense layers on the eastern declivity near its extremities, in Norway, in the province of Christiansand, on the south, and in the Vestmaan Islands. In the latter, near the church of Gellivara, there are mountains many hundred feet high, consisting entirely of iron-ore. But the rich iron-mines of Sweden are not within the plants are found in the crevices of the bare rock, projecting out of the snow-masses 300 feet above the snow-line, and Lichenites umbilicata even 1500 feet higher in similar situations. Higher up, the vegetation is composed of moss and heath, no animal or bird is met with, except the Emberiza nivalis.

North of 68° N. lat. the mountains along the watershed of the rivers, which flow respectively into the gulf of Bothnia and into the Atlantic, sink to a much lower level, none of their summits attaining the snow-line. The declivity towards the range lies along the West Fiorden, or the long strait which divides the Lofoden islands from the continent, and on these islands themselves. In these parts numerous mountain-masses are known, rising to 4396 feet, and the snow-masses along the eastern shores of Lyngen Fiord rise almost perpendicularly above the region of snow to upwards of 4000 feet, and the glaciers descend to about one-fourth of this height. At 70° N. the Yække Field, between Quisanger Fiord and Alten Fiord, which rises to 3700 feet, and is covered with extensive snow-masses. It is the most northerly mountain of the Kjölen on the continent.

In these parts all the mountain-masses are isolated, being ranged from one another by swampy valleys with steep sides, exactly resembling the deep sounds between the islands lying along the shores. The mountains on the Lofoden islands are hardly inferior in height. Snow-capped summits occur in East and West Vaage, and they rise in places 6000 feet from the eastern shores of the islands to the sea. Farther north they are less elevated, but the last snow-masses occur on the island of Seiland, where they may be considered as a continuation of the Yække Field, which stands opposite the island, on the continent. The islands farther north, between Manger and Cape, are far less elevated. This is the most dreary part of the Kjölen range. The rocks are naked and the valleys narrow. They contain little wood, and that of a small size. In a few places in the innermost recesses of the fiords some few spots occur, which cannot be kept cultivated. The sea supplies the scanty population with subsistence.

The Yække Field may, in some measure, be considered as the termination of the high range. Rocky masses of this kind occur at the entrance of the Lofoden Fiord, between Alten Fiord, Porsanger Fiord, Laxe Fiord, Tana Fiord, and Waranger Fiord, but they decrease in elevation as they proceed farther east. The highest portion of these rocky masses occurs at the extremity of the headlands, on the shores of the Lofoden where they are not reduced below 3000 feet. The sea supplies the scanty population with subsistence.

The principal Islands are: Hest, North and South Frøya, Ringa, Ybagai, and some islands under 2000 feet, in the innermost part of the Fiorden, Lofoden, which contains the last elevated summits of the Kjölen Mountains. The Vorio Duder, south of the innermost recess of the Porsanger Fiord, probably attains nearly 3620 feet, and Mount Rastekaise, south of the Laxe Fiord, 3200 feet. Between the laked Enars is Mount Poldeva, an isolated height, rising to 2130 feet, but not above the region of the birch. Farther east every trace of mountains disappears. This region is somewhat more favoured by nature than that south of Yække Field. It is true that the Porsanger Fiord and the bays east of it, being open to the northern and eastern gales, do not admit any kind of cultivation: but on the Atlen Fiord, which is sheltered against these winds by the elevated islands lying before its entrance, barley and potatoes are carefully cultivated. The trees attain a considerable size, though this place is in 71° N. lat. It is the most northern place on the globe in which grain is grown.
range; they are situated in the lower country which extends south-east of it. Silver occurs at Kongsberg and Ivarisberg in Norway, and at the Nasafield in Fins, Upper Canada, but it is not very rich. The lead in the country adjacent on the east, where copper is found in the Dovre Field, at Røraas, Medal, and Selby—the mines of Røraas are productive. Lead is also found in the southern district of Norway, and in the Nasafield, and in several places on the eastern declivity of the Norrsk Fjellien; zinc, marble, and slate also abound in several places.

(Von Buch's Travels through Norway and Lapland; Elliott's Letters from the North of Europe; Everest's Journey to the Source of the Ganges.)

or.

It is situated on the north-western coast of America, our information is too scanty to enable us to form any opinion as to their connection or affinity.

When the Europeans began to settle on the eastern shores of North America, they found that the aboriginal tribes, some of which are stated to have been very numerous. In the space of about 200 years most of these tribes have entirely disappeared, and others have left the eastern country and retreated into the interior. The most numerous of these tribes consisted of the aborigines of the southeastern countries, the Mandans, and the Mandans were generally regarded as the principal tribe of that part of the country. They were situated near the mouth of the Arkansas river, and were considered as the most numerous and most peaceable of all the American tribes.

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establishment of the new settlements; and the third was to provide an annuity until they should have ample means of procuring subsistence. Under such treaties, the Indians, who, up to the year 1836, had resided east of the Mississippi, are to be removed to the west of that river. All the tribes, except the Wyandots in Ohio, have accepted the cessions, and the greater part of them took possession of their newly-assigned territories during the years 1837 and 1838. The remainder, it is supposed, will follow in 1839 and 1840. The following table is taken from the last Report of the Commissioners of Indian Affairs, dated November 24, 1838:

<table>
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<tr>
<th>Names of the Tribes</th>
<th>No. of individ. to be removed originally</th>
<th>No. of individ. removed before Mar. 26, 1837</th>
<th>No. of individ. moved to before June 30, 1837</th>
<th>No. of individ. still to be removed</th>
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<tr>
<td>Chippewas, Ottawas, and Potawatomies</td>
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<td>161</td>
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<td>Potawatomies of Illinois</td>
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<td>494</td>
<td>768</td>
<td>150</td>
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<td>177</td>
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<td>725</td>
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<td>Creeks</td>
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<td>4,166</td>
<td>750</td>
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<td>Ott warriors</td>
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<td>West</td>
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<td>Plains</td>
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<td>Foxes and Kaskaskias</td>
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<td>Sauk-chausses</td>
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<td>Weas, Nezassas, Shawnees</td>
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<tr>
<td>Chippewas</td>
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</tbody>
</table>

The Indians, who previously to 1837 were in possession of an extensive tract in the state of Alabama [Alabama; Creek Indians], are now settled on the northern fork of the Canadian river, where they possess extensive and fertile bottoms for the cultivation of corn, pumpkins, beans, melons, &c., but their pasture-grounds are inferior to those of the Chocktaws. A portion of them have settled on the Arkansas river. They are more inclined to labour than any other tribes, and they are good agriculturists. They are at present opposed to missionaries being sent to instruct them. They have not, it is supposed, the same constitution and laws, except such as are passed by the chiefs in council. The Seminoles, or Florida Indians, are settled on the northern fork of the Canadian river, between the two tracts occupied by the Creeks. They are much behind their neighbours in civilization, and not much disposed to agricultural labour.

The Cherokees, who formerly occupied a portion of Georgia and Alabama, are now established on the bottoms of the Arkansas river, where they cultivate maize, wheat, potatoes, beans, and vegetables. They are further advanced in civilization than any other Indian tribe. They are governed by written laws, enacted by the council of the nation, which meets annually in October. Judges are appointed in each district, with a sheriff to execute the laws. Trial by jury exists, and generally the laws as to property and the punishment of crimes are the same as in the United States.

The two smaller and united tribes of the Senecas and Shawnees, which formerly inhabited some tracts hereafter assigned to the Creeks, are now settled on the Neosho river, an affluent of the Arkansas from the north; and the Quapaws, who formerly lived within the state of Arkansas, have been removed to the same part. These three tribes have not made much progress in agriculture, but the number of the Osages is much exposed to the deprivations of the Oseges, a tribe which occupies the banks of the Osage river, and gains its livelihood chiefly by hunting. But as game begins to scarce, the Osages are often in distress, and plunder their neighbours.

As most of the tribes which are dispersed through the states north of the Ohio were averse to removing to the countries on the Red and Arkansas rivers, several of them were placed on the banks of the Osage, Kanias, and on the Missouri river itself. The four small tribes of the Weas, Piankeshaws, Pears, and Kaskaskias, with a small number of the Ottawas, altogether not exceeding 1000 souls, occupy the tracts adjacent to the northern banks of the Osage river, and in their neighbourhood are also settled the Pottawatomies of Indiana, who somewhat exceed 1000 in number. All these tribes, through not yet entirely accustomed to agricultural labour, raise nearly as much maize, potatoes, and vegetables, as are required for their own subsistence, and show a disposition to adopt exclusively agricultural habits. A few of them send their children to school, especially among the Pears.

The tribes of the Sioux, Delawares, and Kickapoos, when taken together, compose a population of about 2500, are settled near the confluence of the Missouri and Kanzas rivers, and on the bottoms contiguous to the last-mentioned stream. These nations have entirely given up the chase, and have begun to cultivate the country as assigned to them with great industry; they raise maize, beans, peas, potatoes, turnips, and melons in abundance. Many of them send their children to school.

The Chippewas, Ottawas, and Pottawatomies, who were removed from the state of Michigan, are settled on the banks of the Missouri, north of its confluence with the Kanzas river. But as they have not yet decidedly adopted agricultural habits, the labour of the fields is still left to the women, who cultivate potatoes, pumpkins, melons, &c. The Kickapoos, who had been removed to the west of the Mississippi, have been distributed. The settlement of such a number of Indians in these parts must of course reduce the extent of the hunting-grounds of those tribes who inhabit these regions, and consequently their property in land and game has been considerably less than may be imagined. The countries on the Red and Arkansas rivers, where the most populous tribes are settled, were nearly uninhabited, none of the wandering tribes having chosen them for their abode, except the Sauk, Fox, and Osages; on account of the want of game and the scarcity of buffaloes. They were only visited from time to time by small bands, mostly belonging to the Pawnee nation. The case is somewhat different with the tribes settled on the banks of the Missouri river and its affluents. They partly
occupy the hunting-grounds of the Osages, Pawnees, Otoes and Missourians, and Omahas; and it is probable that this circumstance will lead to some hostilities. It is hoped however that they will not be destructive or lasting, as these tribes do not depend entirely on the produce of the chase for their subsistence, but cultivate their lands, though only to a small extent.

It is the general opinion that all the aboriginal tribes of North America originally obtained their subsistence by hunting and fishing, and that they were introduced among the Europeans. But this opinion appears to be in some degree erroneous, for most of these tribes cultivated the ground to a small extent, and raised maize, pumpkins, melons, and tobacco. This amount of agriculture was sufficient for the needs of these tribes who inhabited the states of the Union, but extended to those in the valley of the Missouri to its great bend (near 47° N. lat.), where the Mandans and Minitaries lived in permanent villages, and cultivated maize and some vegetables even when they were first visited by the whites. The labour of these flat-lands however was entirely left to the squaws, or women, and limited to what could be done with the hoe. The produce thus raised was insufficient for the maintenance of the families, and the deficiency was supplied by the produce of the chase. It is of the greatest importance if the civilizing influence of the white man is to be felt among the aboriginal tribes of North America, to foster agriculture as the first step in the civilization of these tribes and to encourage their efforts to abandon the chase.

The aboriginal tribes which entirely subsist on the produce of the chase, and have no permanent residence, are found within the territories of the United States only along the rivers Missouri and its tributaries, and the Blackfoot region which stretches from the base of the mountains about 400 miles eastward. The number of these wandering tribes is very great, but most of them belong to two great nations, known by the names of the Sioux and Blackfeet. The former have their seat in the region north of the Missouri, and extend eastward to St. Peter's river. The Blackfeet chiefly inhabit the mountainous country which extends around and among the different rivers by which the Missouri is formed; but they extend their hunting excursions northward to the Saskatchewan, and southward to the Platte and Arkansas rivers. As the Blackfeet and the Assinaboins form the most isolated tribes of the United States, and the British possessions, and extending from Lake Superior to the Chippewyan mountains, is in possession of two nations, the Chippewas and Assinaboins. The Chippewas, who occupy the eastern districts as far west as the Red River of Lake Manitoba, are divided into two tribes, the Cree and the Ojibway, a large branch of the nation called the Crees, or Kinstineaux, which extends farther east to the shores of Rainbow Lake, the Assinaboins, who live west of the North Red River, are considered as one nation, the Crees being divided between some tribes of the Blackfoot, and the latter by the Assinecoray, or Stone Indians.

Neither the Assinaboins nor the Crees extend their wanderings to the base of the Chippewyan mountains, but being divided into three tribes some of the Blackfoot, and the latter by the Exsienaqua, or Stone Indians.

The last-mentioned tribe hunts on the extensive plains between the forks of the Saskatchewan river. The Crees extend their excursions northward to the banks of Great Slave Lake. North of this lake the shores of Slave and Mackenzie rivers are the Beaver Indians, the Hear Indians, and the Louchen Indians, in the countries west of the river the Copper and Dogrib Indians. These three nations are divided into several members, and the Ekimaquo, who occupy the shores of that sea. These tribes live principally by hunting, but they also in the extensive lakes which cover a great portion of the country.

Our information respecting the aboriginal tribes which inhabit the countries west of the Chippewyan range is scanty to enable us to give even a list of them. The most powerful tribes on the banks of the Columbia river, from the mouth of the Columbia to the highland of the north-western coast of America are the Nootka, or Salish, the Coos, the Whiskey, and the Flatheads. The Shoshones occupy the countries...
as the southern and the Flatheads those on the northern branches of the Columbia river. 

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The Geologists, though touching out a small portion of modern Germany, and though more commonly called the North Sea, still maintains its ancient name, derived from Oceanus Germanicus. (Ptolomy, *Geogr.* lib. ii. cap. 3.) It is separated from the Atlantic by the broad gulfs which form its west, which, having on the opposite side by Norway and Denmark from the Baltic. To the southward it is bounded by the coasts of France, Belgium, the Netherlands, and Germany; and to the northward by an open space between the Shetland Isles and the Norwegians in proving to Beringshaur to the Polar Sea. With the Atlantic it is connected through the Strait of Dover by the English Channel; and with the Baltic by the broad gulf called the Skagerrack, which, from the variety of more than one hundred feet, through the Danish and the Jutland, there takes the name of the Kattegat; and then divides into the three navigable but narrow passages called the Sound, the Great Belt, and the Little Belt. It extends across ten degrees of latitude and eleven of longitude; its greatest depth is not in any published chart; but it is generally reckoned with his kind peculiar to the North Sea as ground-fish, and solas of unusually large dimensions have recently been taken from it, but it is a place very dangerous to towling-nets by reason of its narrowness, the perpendicularity of its sides, and the rapidity of its current, which renders it difficult to drag nets fairly along its bottom. The North-northeast hole, so called from its position with respect to Cromer, is another of these remarkable places, and characterised nearly as the other is; it is situated eight leagues to the eastward of the Little Silver Pit; its greatest depth yet discovered does not however exceed 265 feet.

One island only interrupts the uniformity of this sea, Heigoland Rock, which lies off the mouth of the Elbe, unless the Sound, or the Strait of Dover, or the Straits of the Frith of Forth, may be so called: on each of these three insulated spots lighthouses have been erected. Lighthouses have likewise been established on all the salient points of the coast, as well as at the entrance of all the principal harbours. The North-northeast hole is moored on several of the detached banks. Between Dover and the Shetlands 56 lights may be reckoned, and on the opposite continent 25 succeed each other from that on Cape Grines in the Strait of Dover to the entrance of Bergen. Multitudes of buoys and beacons have also been placed on the sand-banks, wherever the swell of the sea would admit of their being secured, in order to mark the proper channels, but no pains or expense can be too great to ensure the safety of all sailors, either by indicating their position by lights, or to facilitate the extensive traffic which it is the means of supporting between the active and industrious nations that inhabit its shores. It carries the great staple commodities of the northern regions of Europe, their coals, the timber suited for their shipbuilding, their bens, tallow, and beets, in return the manufactures, the necessities, and the luxuries of more favoured climates. It is the marine highway to the capitals of eight different states, and it may be asserted that no sea in the world of similar dimensions can bear a greater quantity of vessels, either by the number of vessels which it employs or in the general value of their cargoes. The profusion of fish in the German Ocean has in all ages been celebrated, and the description of its fisheries is one of the most striking features of its natural and endearing perseverance of the hardy Dutch and British fishermen who frequent this turbulent sea are proverbial: at all times of the year they brave its inclemencies.
in pursuit of the fish which are in season. The principal of these are cod, hake, and ling, with turbots, soles, and other flat fish, and especially the vast swarms of mackerel and herrings which at certain periods visit our shores, and which are employed by the crews of men, women, and children. The lobsters found on our own rocky coasts are not sufficient to supply the demand, and the London market alone employs five or six vessels constantly plying between this country and Norway, which seems to be their favourite coast. When brought in large wooden cases, properly perforated, and secured in a creak called Hole-Haven, on the Essex side of the Thames, near the upper part of Sea Reach, from whence they are transmitted to Biltsgate according to the consumption.

To trace the course of the tides in the German Ocean would require a long article, so various are the phenomena, and so incongruous do they at first sight appear; the flood running to the northward along one part of our coasts and the southward in another; rising upwards of 20 feet in some of its situations, and elsewhere being scarcely perceptible; and though everywhere regulated by the phases of the moon, yet showing high-water in one place at the same time that another is dry. When brought to harbours, the tides are not always perceptible, but a few words will explain the general principle of these apparent irregularities. The great tidal wave which rolls up from the Atlantic Ocean splits at the south-west angle of Ireland into two streams, one of which pursues its straight course up the English Channel, and is checked or modified in its progress by the converging shores; while the other passes to the northward, and bending round the north of Ireland and Scotland, pours through the Pentland Frith with a velocity of seven or eight miles per hour, or, sweeping round the Orkneys and Shetlands, turns to the southward along the coast of Great Britain, but spreading as it goes across the whole expanse of the German Ocean. This circuitous course requires more time for the transmission of the northern wave than that which arrives through the Strait of Dover. As a consequence, before when the northern tide, which takes place off the coast of Essex, the northern is half a day later than the other branch from which it was originally separated. On the coast of Holland this meeting occurs off Texel, but the evening interval between those two shores these opposite streams seem to neutralise each other, so as to produce neither rise nor fall. Besides the action of the lunar tides, the effects of distant currents are sometimes manifest in the northern part of this sea, produced by the melting in another polar ice, and, in an opposite direction, by the continuous movement of an offset from the Gulf Stream of America.

The icebergs which quit the arctic seas and melt in the vicinity of the German Ocean, the overflowing of the Baltic Sea, the influx of fresh water from its confined space from the surrounding rivers, sufficiently prove, whatever may have been asserted to the contrary, that its water must contain considerably less salt than that of the Atlantic.

NORTH-WEST PASSAGE. If a vessel by sailing from the western shores of Europe in a north-west direction were to enter the Pacific, it would be said to have made the North-West Passage. The first attempts to accomplish such a voyage were nearly coeval with the discovery of America. These attempts were frequently renewed, but it is still doubtful if such a voyage can be accomplished.

A few years after the discovery of America, Vasco de Gama, in the year 1503, resolutely setting the shore of Boscudt. He returned to Europe in 1499. On comparing the geographical position of the countries discovered by Columbus and Vasco de Gama, it was evident that an immense space lay between them. This space comprised the great kingdom of Cathay (China), between two of the grand maps made by the German geographers of that time, on the authority of Marco Polo (who however had not determined the geographical position of any place which he visited), extends more than twenty degrees east of its true position. It was therefore concluded in Portugal, that Vasco de Gama had only sailed half way to Cathay, and that the countries discovered by Columbus were much nearer to Cathay than the coast of Malabar was. It was supposed, that if a vessel were to sail from the countries discovered either to the north or the south, it would reach Cathay. This consideration gave rise to the first attempt to make a North-West Passage, which was viewed as of such importance, that the attempt was made before the second Portuguese fleet, under the command of Cabral, was despatched to the East Indies. In 1500, Gaspar de Cortereal, a distinguished nobleman, was sent to the North-West Passage. He discovered a large part of the north-eastern coast of Labrador, and, as it is said, to the extent of 600 or 700 miles. The following year he returned to the place to which his discovery had extended, and came to a strait, which was called Hudson's Strait. If the latter it is hard to say whether he is to be credited, or whether there is any reason to suppose that he directed compass, and can hardly be doubted that this is the strait which is now called Hudson's Strait. Being entangled in the floes, he wintered there, and in 1502 he returned to Portugal.

The next English attempt to make the North-West Passage was undertaken by Sir Hugh Willoughby and Richard Chancellor, in 1576, whose ships were the Swallow, by which it was proposed to reach the Pacific by sailing from west to east along the northern shores of Asia.

The next English attempt to make the North-West Passage was abandoned. Towards the end of the sixteenth century the Dutch commenced their enterprises in this direction, for which they had a strong motive. Having risen in arms against Spain, they were in possession of the Cape of Good Hope, and their vessels were excluded from the ports of America and of the East Indies. In their voyage to such parts of the East Indies as did not belong to the Portuguese, and on their return home, they had to traverse a large extent of sea, of which the Spanish then claimed the dominion, and in which their merchant vessels were in danger of being taken. The Dutch merchants accordingly resolved to try it if it was possible to reach the East Indies by a North-West Passage. William Barents made two voyages in search of the North-West Passage, but was unable to succeed east of Novaya Zembla and the Strait of Weryng, on account of the quantity of ice which always covers the sea to the east of that island. Since his last voyage, in which he was in the hope of reaching the coast of Asia, the North-West Passage has been given up as impracticable.

In the meantime the North-West Passage was last sighted of until the year 1576, when the attempt was again made by the English, who prosecuted this object with great ardour. For many years it was supposed that Sir Hugh Willoughby's voyage was a discovery of the North-West Passage, but it is certain that it was not so, and that his voyage was an attempt to reach the Russian Empire by a shorter passage than that of Oldenburgh and Bering. The second voyage, under the command of Sir Thomas Perry, was more successful, as he discovered the Strait of Zembla, and the passage of the Arctic Ocean.
Cumberland Strait (65° N. lat.). In his third voyage he extended his discoveries along the western shores of Greenland as far north as Sanderson's Hope (72° N. lat.), and in sailing southward he likewise found the entrance of Hudson's Strait, which had been seen before the time of Ger- teral and Frobisher, but none of these three navigators seem to have advanced any great distance into it. [Davis.] Henry Hudson, after several unsuccessful voyages of discovery on the north, directed the new navigation to the north-west, and penetrated through the strait into the bay, both of which are now called by his name. He passed the winter on the shores of the bay, hoping to find a passage to the Pacific in the following year, but his crew, which had been with him since 1614, were wearied of the long passage, and abandoned him and some of his adherents in a boat in the middle of the bay. Hudson was never heard of afterwards. [Hudson.] In the two following years some parts of Hudson's Bay were explored. In 1612 Sir Thomas Bon- ton discovered Roe's Welcome, the strait between Southam-pton Island and the continent; and Blyt in 1613 dis- covered Fox Channel between Cumberland Island and Southampton Island. Blyt and Baffin in 1614 penetrated through Davis's Strait and explored Baffin's Bay to its most northern point (73° N. lat.), and entering the strait which now bears his name, he discovered a bay, which evidently was useless, and this opinion soon became so prevalent as to put a stop to all voyages of discovery in this direction. The voyages were now directed only to the exploration of Hudson's Bay, and no further. In 1631 John Davis discovered James's Bay, the most southern part of Hudson's Bay, and Fox again ex- amined the two straits which enclose the island of Southamp- ton, Roe's Welcome, and Fox Channel. More than a hun- dred and forty years (1714, Middleton explored Wager's and Repulse Bay, to the west of Roe's Welcome, and found that both were closed inlets.

While the English were pursuing their discoveries on the north-eastern shores of North America nearly without interruption, the Spanish were engaged in the same part of the world. The strait, which now bears the name of Regent's Inlet. West of 160° W. long. no land was in view on the south. Parry and his crews passed the winter on Melville Island, hoping in the following summer— and he was able to advance to this though it skirted the northern shores of this long strait that they had been enabled to proceed so far westward, and that the sea ceased to be navigable where these islands terminated.

The only hope of reaching the Pacific by Lancaster Sound being frustrated, Parry proposed to try if the object could be effected by any of the inlets which open into Hudson's Bay, the northern portion of which had not been explored. In 1621 he entered the bay, and descended the strait to Lancaster Island and Southampton Island, he advanced to Repulse Bay, which he examined and found to be completely enclosed, as Middleton had described it. He then explored a part of the contiguous coast to the northward, in which he now another larger inlet, which he called Lyon's Inlet. His vessels were soon afterwards frozen up in the midst of the sea, near Winter Island (65° N. lat.). In the following summer he continued his voyage northward, and discovered the whole coast between 65° and 70° N. lat., in which no deep indentation occurred, with the exception of a wide sound between 65° and 70°, which he explored for more than 60 miles, when he found that it was closed by a barrier of ice, lying south and north across the strait, but ascertained that beyond this barrier there was an open channel. He then explored the western coast, and found the strait the following summer, and accordingly he passed the second winter on the island of Igloolik, at the eastern ex- tremity of the strait. But though he waited to the middle of August, and all the following bore was covered with ice, and he was obliged to give up all hope of effecting his purpose.

The result of this attempt showed that Fury and Hecla Strait did not allow a navigable North-West Passage. After a long voyage of discovery, he was instructed to try how far he could advance northward between Asia and America. He reached Icy Cape (70° N. lat.), where he found that a barrier of ice extended from thence to the strait. In the same voyage he visited several parts on the western coast of North America, and found that on the western side of the rocky shores were indented by numerous inlets. The nearest forgotten fabrication of Juan de Fuca was again dis- covered, and the English as well as the Spaniards soon after sent several expeditions to survey these coasts. After a close examination of the whole coast north of 45° N. lat., it was ascertained that it consisted mostly of islands, sepa- rated from the continent by narrow sounds, and that the numerous inlets by which the continent itself is indented do not extend far inland, and terminate at the foot of elevations, which seem to be mountains or hills.

The question as to the existence of a North-West Passage now seemed to be decided in the negative, when the whalers who annually visit the sea on both sides of Greenland reported that in November 1621 and 1612 the ice seas were so great as to make a passage impossible. The British government now resolved to make an attempt to settle this question. In 1818 two vessels were despatched, under the command of Captain John Ross and Lieutenant Welcome, to explore the strait. He was able however to advance beyond the mountains or ice, and Captain Ross was also of opinion that this was the case with Lancaster Sound (between 73° and 75° N. lat.), and that a North-West Passage did not exist in these quarters. But Parry thought that the last-mentioned inlet had not been examined with sufficient care, considering its great width. Parry was sent in the follow- ing year (1819), for the purpose of examining Lancaster Sound more closely than had been done by Captain Ross. It was entered in a strait which consisted of two large inlets, and the course of the strait was westward, and the name of Regent's Inlet. West of 160° W. long. no land was in view on the south. Parry and his crews passed the winter on Melville Island, hoping in the following summer— and he was able to advance to this though it skirted the northern shores of this long strait that they had been enabled to proceed so far westward, and that the sea ceased to be navigable where these islands terminated.

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information obtained from the Esquimaux, stretches far to the south, might not allow a passage. On arriving at the entrance of the Inlet, he found it much encumbered with ice, and was obliged to pass the winter from 1824 to 1825 in Port Bowen, on the western coast of Cockburn Island. In trying to sail southward the following July, one of the vessels (the Fury) was lost in the ice, and Parry returned to England. The Government did not think fit to continue these voyages, which led to no definite result; but as the last attempt of Parry had been merely interrupted by an accident, it seemed still probable that a navigable North-West Passage might exist.

A wealthy individual, Sir Felix Booth, furnished all the expenses for a new adventure, the direction of which was given to Captain John Ross, who, after passing through Lancaster Sound, entered Regent's Inlet in 1829, and for the western shores of the inlet as far south as Felix Harbour (70° N. lat.), where he passed the winter. The following seasons were unfavourable, the sea being constantly encumbered with heavy ice, and he was obliged to remain nearly on the same spot two more winters. This circumstance gave him an opportunity of examining the adjacent countries, and be found that the country west of Regent's Inlet was not an island, but joined to the continent of America by a low isthmus of inconsiderable length and breadth; however supposed that a strait of this nature existed in this part, which escaped his research. The peninsula which Ross considered to be united by the low isthmus to the continent of America was called by him Boothia Felix. The shores of the continent itself, west of the isthmus, extended to a distance of 70 miles, constituting the most western cape which was reached was called Victory Point (68° 46' N. lat. and 98° 33' W. long.). In another excursion the Magnetic Pole was found to be in 70° 55' N. lat. and 96° 45' W. long. Not being able to extract his vessels from the ice, Captain Ross, and his crew returned in 1832 in boats to Hudson's Bay, where they were received on board of a whaler.

The only North-West Passage the existence of which is certain, is a long strait which is connected with Baffin's Bay by Lancaster Sound. This strait ought not, in conformity with the precedent of Magellan's Strait, to be called Parry's Strait. Since however its western extremity is always blocked up with ice, it never can be available for the purposes of navigation. Still it is not improbable, as already mentioned, that another strait divides Boothia Felix from the continent of America. This hitherto unknown strait has lately attracted a great deal of interest, as being connected with the northern termination of the American continent. The strait lies to the east of the American coast between Baffin's Bay and the mouth of the Mackenzie river is now known. Between the discoveries of Captain Beechey, who advanced to Point Barrow (71° 28' N. lat. and 160° 10' W. long.), and those of Sir John Ross, who went so far as Point Beechey (70° 30' N. lat. and 150° 10' W. long.), it is supposed that 130 miles remained undiscovered, and this tract was explored, in 1837, by Messrs. Dease and Simpson, agents of the Hudson's Bay Company. (London Geogr. Journal, vol. viii.) East of the Mackenzie river the coast-line as far as Point Turnagain (near 105° W. long. and 63° 30' N. lat.) was discovered by Sir John Franklin and Doctor Richardson, and the distance between this cape and the Point Victory of Captain Ross does not much exceed 300 miles. Dease and Simpson advanced to 106° W. long. in 1838 (London Geographical Journal, vol. ix.), so that the whole distance now unexplored does not much exceed 200 miles. Captain Back, in his expedition in search of Captain Ross, found a sea between 67° and 68° N. lat. and 95° and 87° W. long. Back observed a pretty strong current setting eastward, which is the strongest argument for presuming that a strait exists in these parts, probably to the south of Point Victory. If the Hudson's Bay Company continue to encourage their agents in the far north, more we shall be acquainted with the whole extent of the American continent towards the north and the question respecting the North-West Passage will be finally settled.

It is evident that the great advantages which were once expected to accrue from the discovery of a North-West Passage, can never be realised, and it is even doubtful whether such a passage will be of any use at all. Even if the yet undiscovered portion of it should be navigable, that portion which we already know is totally unfit for navigation during the whole year. Between the mouth of the river Mackenzie and Barrow Point, the most northern cape of America, the sea, even in August and September, is so encumbered with ice, that in some parts it is impossible to advance in large boats. It is certain that a trading vessel will never find its way through that frozen sea. Still we are inclined to attach some importance to the discovery of that passage as a geographical question, but also in a practical point of view, simply because we can never form a just idea of the usefulness of anything before it is known.

(Barrow's 'Historical Chronology of Voyages into the Arctic Regions' (London: 1833).)
of Juan de Fuca, where one of its summits, Mount St. Helen's, is 14,400 feet high. This range divides the more fertile portion of the southern region from that which is sterile. The country west of the range is, in general, covered with trees. Along the western declivity of this range is the Columbia valley, which is 60 miles wide towards the north, and extends far to the south: its southern districts have not been explored. It is a country of great beauty; the surface is generally smooth. Through the summer months the countryside is covered with dense forests of hemlock, spruce, white and red cedar, cotton-wood, white oak, and some other kinds of trees. These forests extend to the shores of the sea, which are rocky and precipitous in several places, and exhibits great luxuriance in its extensive meadows and fine forests. The river Wallamot, or Wallamatt, runs through this valley. A range of high hills runs on the west of the valley, and from this range to the shores of the Pacific Ocean along which the Columbia flows, in some places it is covered with dense forests of hemlock, spruce, white and red cedar, cotton-wood, white oak, and some other kinds of trees. These forests extend to the shores of the sea, which are rocky and precipitous in several places, and exhibits great luxuriance in its extensive meadows and fine forests. The river Wallamot, or Wallamatt, runs through this valley.

The modern declivity of the mountain range is on the west side of the basins, which are subject to inundation, and covered with willows, poplars, and other trees. In other places the mountains recede from the river, leaving between their base the stream beautiful plains, which are covered with tall trees. These plains are one of the great objects of European agriculture. The adjacent mountains are overgrown with deciduous trees; but the more elevated part of the uplands is covered with majestic pines and firs, some of which tower to the height of between 200 and 300 feet. Where the Columbia valley opens on the Columbia plain, the mountains are covered with so dense a growth of shrubs and rushes as to be almost impassable. Where the elevated range of Mount Hood comes up to the river, the banks consist of stupendous precipices covered with fine fir and fir-covered mountains.

Mount Hood, the range which contains Mount Hood, the country is an inclined plain, rising gradually towards the east, south-east, and north-east, until it joins the base of the Chippewyan Mountains. This tract, which is about 150 miles wide, is in many places a tract of great extent, alternate with ridges of moderate elevation. The soil of the level grounds consists chiefly of gravel and sand, interspersed with bare rocks. These plains are nearly as destitute of vegetation as the country along the eastern base of the Chippewyan Mountains. The hills extend in ridges running south and north, and generally consist of an infurated clay: they exhibit few signs of vegetation, and are very rarely covered with forests, except on the more elevated parts, where they are clothed with scrub pines and cotton-trees, aspens, a small kind of cotton-tree, and some shrubs.

The Chippewyan Mountains, which lie to the east of this desolate region, seem to consist principally of two elevated ranges running parallel to one another at a distance of several yards and cataracts: in several places they are united with one another by short transverse ridges. In some places the eastern range rises to the snow-line. There occur in it several depressions, where the upper branches of the Missouri and Columbia approach near one another, and some few of them present no obstacle to the passage of wheel-carriages. The western range does not appear to rise so high, and in several places contains depressions, which allow a passage for the waters that collect from both ranges. The principal branches of the river join the Snake river, not far from the source of the Snake river, in this range, there are three high summits, called the Three Breasts, or Tétons, which stand on a common base, which is perforated by deep canyons, by several small rivers, and by several small mountains. The Umatilla joins the Snake river. The mountains of the Chippewyan range are generally barren; but the intervening valleys contain several fertile tracts, which are partly covered with high trees and partly with grass.

The country enclosed by the two ranges of the Chippewyan Mountains must have a great elevation, which is proved by the circumstance of the great rapidity of all the rivers which join the principal branches and tributaries of the Columbia river. These mountains are successively higher, and their courses sometimes continue without interruption for 50, 80, or even 100 miles. The navigable parts of these rivers are of less extent than those which are quite unfit for navigation. The Long Narrows occur in the Columbia river about 180 miles from its mouth, and occupy 80 miles of its course. They begin with a perpendicular escarpment of 20 feet, and there is a rapid descent for a mile between islands of hard black rocks to another fall of 8 feet, which is divided by two rocks. About 24 miles below this fall the river expands into a broad basin, from which the water escapes by a channel only 45 yards wide and with a fall of 30 feet. Sometimes it escapes by the second greatest fall, over a ledge of rocks 20 feet high, and extending nearly from shore to shore. The river is navigable for large barges up to the Long Narrows, there being its commencement further down. At Vancouver Fort, more than 100 miles from its mouth, the tide is still perceptible, and vessels of between 200 and 300 tons can ascend to this point.

A country which rises with a steep ascent from the sea more than three thousand feet in a distance of about 300 miles, and of which about one-half is exposed to the influence of the Pacific, must have great differences of climate. We are only imperfectly acquainted with the climate along the coast; but we know that it resembles the western United States, which are on the Atlantic. The winters are not rigorous nor the summers sultry. There is little snow, and it generally melts while it falls: it rarely remains more than two days on the ground, except on the mountains. The Indian winters are usually mild, and snow falls in the middle of October to the middle of March; the rains are then incessant, and are accompanied with tremendous thunder and lightning. The winds which prevail at this season from south and south-west bring rain; while those from the north and north-west bring fair weather and a clear sky. From the middle of March to the middle of October the weather is serene and delightful; only a few showers of rain fall, but in the intervals between. The deep and fogs are very heavy. As to the interior of the country, we only know that the winters are severe, but the quantity of snow is not great; and during the summer there is a want of rain, which is probably the main reason of the sterility of this part of the country.

The interior of the country is inhabited by several Indian tribes, among which the Flat-heads, on Clarke and Columbia rivers, and the Snake Indians, or Shoshonees, on this river, are the most numerous. They are tough, sturdy, and bold, and live chiefly on the produce of the chase. They frequently resort to the countries east of the Chippewyan Mountains to hunt the buffalo, which is not found west of the range. The smaller tribes, which inhabit the country along the Columbia and Snake rivers, consist almost entirely of the Snake Indians. Several kinds of fish abound in the rivers, especially sturgeon, salmon, and a smaller kind of salmon called Clilkato. The wild animals are the deer, black and grizzly bear, a species of antelope, the sabata or big-horn, the beaver, the sea and river otter, the musk-rat, fox, and wolf; the puma is sometimes met with. This seems to be the most northern country on the western side of America where the puma is found. On the eastern side of the United States it is met with in the Essex Mountains, in the state of New York.

The Central Region, which extends along the coast from the Sound of Juan de Fuca to Behring's Bay, is still less known, with the exception of the coast and the numerous islands which skirt it. Though the Hudson's Bay Company has of late years formed several establishments in the interior, and particularly south of 55° N. lat., we possess little information respecting its natural capabilities. The Chippewyan Mountains continue to form two ranges, about 100 miles wide, and one another, the eastern range, is far the more elevated, and contains many snow-capped summits, among which Mount Hooper rises to 15,690 feet, and Mount Brown to nearly 16,000 feet. Its general elevation seems to be that of the vegetation, for it appears that there are many deep depressions in this part of the range. No part of the western chain attains the snow-line. Between these ranges is the valley of the Upper Columbia river, which finds its way through a deep break
in the western range, which it traverses with numerous rapids and cataracts. North of 53° N. lat. both ranges
seem to become less abrupt. The virgin forest of the
western range constitutes one uninterrupted mass of mountains, but the eastern is broken by some narrow
deffs, through which the rivers carry off the water that is collected in the valley
between the two ranges. The river, which is usually called the Peace river, or Unjigah, and the
northern the Southern Branch of the Mackenzie river, or
Turnagain, drain the valleys enclosed by the two ranges and
traverse the country between them, later in their course in
the eastern range by narrow valleys, they enter the great
plain est of the Chippean Mountains; the Peace river
falls into the Slave river, and the Turnagain river into the
Mackenzie river. The valleys which are drained by the
upstream courses of the Columbia, Peace, and Turnagain rivers
are probably still more elevated than those of the southern
tributaries of the Columbia river. Mackenzie experienced
a great degree of cold in June on the Peace river, even at
the place where it breaks through the mountain-range.
Mountains which rose only 1500 feet above their base were
then covered with snow. The valleys contain very little level
ground along the watercourses. At a short distance from
the banks of the rivers there are high rocks, from the sum-
mit of which level plains extend to some distance, but
beyond the point of these a great many of the eastern
valleys, or the eastern range, are faced with rocky masses
advancing in the form of ridges, from both
ranges, to the very banks of the rivers, are only farrowed by
narrow valleys, in which the rivers run between steep rocks;
the land is most entirely covered with wood. The
lower tracts along the rivers there are willows and alders,
and on some detached spots there are spruce and white
birch. The uplands are principally covered with pines,
cypress, spruce, and a few other trees. None of these
valleys are inhabited, and only a small number remain in summer and in the earlier part of autumn.
They abound in beaver and moose-deer, and in some tracts rein-deer are
found. Mackenzie saw a humming-bird on the Peace river, near 54° 30' N. lat., which appears to be the northern limit of the species. Birds, geese, and ducks are numerous, but fish is not plentiful.

The country which begins at the base of the western
range of the Chippean Mountains, and extends westward
for about 80 miles from the sea, occupying on an average
a width of more than 100 miles, may be considered as
an even plain. Rocky ridges of moderate elevation run through it in every direction, but they are generally at some distance from each other, and the intervening plains are of consider-
able extent. The surface of these plains, which lie at an
average level, is and in others undulating and hilly, is at
a considerable elevation above sea-level, which is shown by
the deep depression of the streams, and by their very
rapid course. A considerable portion of this plain is covered with fields of wheat and flax, on which the natives
are numerous, and some of them are of great extent.
According to a vague estimate, it is said that perhaps one-fifth of
this plain is covered with water. Though the bare rocks
often appear on the surface, they do not occupy a large
portion of the country, being generally covered with trees
of heavy growth. The climate of this plain seems to be
characterised by great humidity. When Mackenzie crossed
it in June and July, he had merely two or three days of
fine weather in succession, and it sometimes rained several
hours for many days together. To this excessive
humidity and the thick atmosphere we may probably ascribe the vigorous
vegetation of this country. The forest, which cover nearly the whole of this
region, consists chiefly of pine, hemlock, cypress, spruce, birch, and
contains a great number of excellent timber-trees; the underwood, which is
dense, consists of many fine shrubs. These forests contain
many fur-bearing animals, especially beavers and otters.
Several towns, with beaver and moose-deer and
the ground-hog, are abundant. The natives, who appear to enjoy a greater portion of comfort
than the tribes east of the Chippean range, live in convenient
houses, and gain their subsistence mainly by fishing. The
fish abound in several kinds of fish, particularly salmon and
tout.

Fraser river runs through nearly six degrees of latitude,
and its course is probably 500 miles. It is called by
the natives Tacouelle Tessse, at least in the upper part of its
course. It rises near the source of Peace river, and runs
toward the mouth it turns west, and falls into the Sound of Juan de Fuca. Though its course is
narrow and swift, its breadth is great. In the mouth of the river is a bar, through which it is interrupted
cataracts. There are several establishments of the Hudson's Bay Company on its
banks.

Along the coast of the Pacific the country is mountainous,
and occupies a width probably of 80 miles. Between
the mouth of Fraser river and Smith Inlet, a distance of
more than 200 miles, it appears to constitute one uninterrupted
mass of high mountains, the declivities of which extend to
the shores of Queen Charlotte Sound, which separates the
Isle of York from the mainland of British Columbia. Farther north it is occupied in more isolated masses, the open-
ings between which are occupied by inlets extending thirty
miles into the rocky masses, and by wide valleys, through
which the rivers discharge their abundant waters into these
inlets. The higher part of these mountain-mass is generally
covered between 30 and 40 miles from the sea,
rises above the snow-line, and in many parts the icy masses
which cover the summits form glaciers, which occupy a
considerable part of the declivities. Several of these moun-
tains appear to be of volcanic origin, but nothing is yet
observed which is not so common as in the region which skirts the coast
northward. The shores of the Pacific are high, and
rise with a steep ascent from 300 to 700 feet, and in many
places still higher. At a short distance from the shores the
terrains is raised, and a great many islands, which appear to be the
Islands on the Pacific nearly all the year round, and, passing
range, are covered with various trees and bushes, which
are not so common as in the region which skirts the coast.
The vegetation is extremely vigorous. The cypress and pine trees, which
cover the west coast, are a source of great benefit to the
natives, who collect and dry them for the purpose of procuring the skins, which fetch a
high price at Canton.

The islands which skirt this coast partake strongly of the nature
of the adjacent continent. They consist of high mountains, which
are only partially covered with snow: their shores are rocky and high; and
they are only partially covered with forest-trees. The
most southern and largest of these islands is that of Quadra at
its northern extremity, which is about 10 miles wide, and about
half the area of Ireland. These islands divide it from the continent
varies between two and ten miles in width, and is called Queen Charlotte Sound.

No. 7.

The islands which lie farther north along this
curry coast are generally of moderate size. The largest are
Aratiani-ali, Prince Royal, Banks, and Revillagigedo Island. About
50 miles west of Banks Island is Queen Charlotte
Island, which has an area of about 1000 square miles. Farther north is King George III. Archipelago, which
comprehended a considerable number of large islands. The
largest is Prince of Wales Island, on the western shores of
which is Port de Bailla, a fine and safe harbour surrounded
the island, and a few miles to the north, at the
mouth of the river, is a large mountainous
island, which is covered with high mountains,
rocks, and canoes, from which fire and smoke issues in the midst
of eternal ice. The largest of the other islands belonging to
this archipelago are Sitka, Duke of York Island, and
Am--(were the

The north islands terminate at Cross Sound. North of Cross Sound the
river forms a very high pass, and runs along the shores, and its highest summit, Mount Fair-
weather, attains the elevation of 14,761 feet above the
sea-level. This range extends to Behring's Bay. The climate of
these islands is still more severe than that of the opposite
coast. On the island of Sitka the harbour season is but
a few months of the year round, though the small creeks which are enclosed by
hills are sometimes covered with a thin coat of ice. A light
snow falls in January and February, but heavy snows of

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several daily all the year round. Thunder-storms are rare in summer, but more frequent in winter. In winter the air is so charged with electricity, that for many hours together in the darkest nights a bluish green light like lightninged on bars of iron which are exposed to the air. The attempts which have been made to cultivate grain have not succeeded. Though maize and wheat grew well at Nootka Sound, they do not thrive generally. Some kinds of vegetables succeed well. The wood which covers the lower ranges of the hills and mountains consists chiefly of different kinds of fir, cypress, and balsam poplar; they are sometimes of great size. Whales, seals, sea-lions, and otters of different kinds abound in abundance.

The Northern Region, or the large peninsula which stretches between 60° and 70° N. lat. from 130° W. long. between the Pacific and the Polar Sea, and terminates at about 166° W. long. on the shores of Behring's Strait and the seas of Kamchatka. There are no ports on the coast between 60° and 70° North latitude, except those formed by the mouths of the small streams which flow into the sea; these mouths are as yet unknown as to the nature of the country which surrounds them. The country is of the most southern parts of the north-western coast of America. It is only the shores and their immediate vicinity which have been visited, and up to the year 1837 a part of the coast along the Polar Sea had never been seen by any European. Not far from Behring's Strait the now summi, Mount St. Elias, the highest mountain in North America, considered to be the highest mountain in North America, being 17,144 feet above the sea-level. It is connected by a lower ridge with the range of Mount Fairweather. At Mount St. Elias rises the mountain mass, which so far north lies in a direction nearly due north-east, and continues west and south-west, and continues in that direction to the shores of Bristol Bay, where it suddenly grows narrower, and forms the peninsula of Alaska or Alaska, which is about 360 miles long and 120 miles wide. It is well known to what a distance these mountains extend inland, as they have never been traversed by Europeans. Many of their summits rise above the snow-line, and several of them are active volcanoes, especially on the peninsula of Alaska. The streams of these mountains run into the seas of the shore, which are indented by numerous inlets.

The largest of these inlets are Prince William's Sound and Cook's Inlet, which enclose the elevated rocky peninsula of Tchouagatchi. At the point where the peninsula of Alaska is separated from the mainland; there it is cut off by an arm which is above one hundred miles long, and on an average fifty miles wide; it consists of rocky mountains of moderate elevation, with fine valleys between them. The climate along this coast is as humid and mild as farther to the south-east the coastline, and so from the ground, and severe cold is not experienced. This is perhaps mainly to be attributed to the high mountains which shelter it from the north and north-east, and to the high ground of the peninsula of Alaska, which extends west-south-west, and shelters the coast from the cold winds from the north-west. As its coast, where it is exposed to the strong winds from the Pacific, is generally without vegetation, the shores of the inlets and the lower declivities of the surrounding mountains are clothed with timothy grass, fir, larch, poplar, silver poplar, alder, and willow. Earthworks are common on the island of Kodiak and the adjacent coasts, as well as on Alaska. The sea supplies the principal article of food for the natives; the most common fish are herring, cod, halibut, and salmon. Whales and seals abound. The fur-bearing animals, which have attracted the Russians to this coast, are sea and river otters, several kinds of foxes, among which the black fox is in high esteem, black, brown, and red bears, and several kinds of marmots, besides bears, remain from the forest and the animal in the mountains a kind of wild goat is found. The peninsula of Alaska and the chain of volcanic islands which stretch from the extreme western point of the peninsula, nearly to the shores of Kamtchakha, separate the sea of Okhotsk from the sea of Bering, and contains of more than two hundred miles the Bay of Bristol, into which a river falls which brings down the water from the large lake of Schemow. This lake is said to be nearly one hundred miles long, and about forty wide in the broadest part. In the vicinity of this lake the hills and mountains are very high, and the river itself runs into the sea between Bristol Bay and No-tou Sound; and north of it is the island of Nuniwak, which is above one hundred miles long, and of moderate elevation.

On the shores of Norton Sound the country is low, but rises with a gentle ascent towards the interior. Cook found it well wooded in parts; and this seems to be the most northern place on the west side of America which attain a considerable size. Farther north the country is low, but in many places intersected with hills of clay, sandstone, and limestone, of moderate height.

The inmost recess however of the deep bay called Katzeboe's Sound, is separated from the open sea by a formation. At the innermost recess of this bay is a hill composed of pure solid ice, about 160 feet high. Over the ice there is a covering of bluish clay, from two to three inches deep, and immediately beneath this kind of turf scarcely a foot deep: it is overgrown with most of the larger plants. The teeth and bones of the elephant fossil are found imbedded in the ice, as in the similar masses of ice which occur in the Polar Sea on the coast of Siberia. The country which surrounds the isolated hill of ice is very low, and partly covered with swamp, and the shores in many parts are lined with narrow lakes. The soil is either sandy, or composed of an elastic bog earth, on which some small plants and shrubs thrive well near the water courses; but at no great depth below the surface. From this point and in the beginning of the autumn Cape Lisburne is formed by a limestone rock about 850 feet high, and some hills extend from it to Cape Beaufort. Farther on to Icy Cape, and thence to Cape Barrow, the country is low, intersected with small lakes, and covered with mud-banks, which between which in this region are several species of foxes, among which the black fox is abundant, and also several species of ursines and glares. The dog is the only domestic animal, and the rabbit which is in a wild state. Otters and carnivorous animals, which occur far north, are the northern of the Aleutian Islands, but the common seal is frequent, and the herd of morses of Behring's Strait are countenances; their teeth form a considerable branch of trade. The seas contain whales of the larger and four species of dolphins. The inhabitants of the shores of Alatscha see seem to belong to the Eskimoa, and greatly resemble the inhabitants of the northern coasts of Asia, the Tschukokas; their languages seem also not to differ materially by them.

Point Barrow, the most northern point of America on this side, is a long low spit, composed of gravel and loose sand, where the pressure of the ice has forced up into numerous masses, which at a distance appear like rocks. It projects several miles into the Polar Sea. From this point and to the mouth of Mackenzie river the coast declines a little to the south of east. This coast is low, consisting in many places of mud, the surface of which is frozen even in summer, and in other places of mud-banks rising from ten to thirty feet, excepting some small islands, which occupy the river, where they attain from sixty to eighty feet. The sea is very shallow, and covered with ice, either in pieces or extending in large unbroken sheets. In many places an open channel lies between the coast-line and the sea, which may or may not be navigable. Some boats, but in other parts the heavy ice is closely packed on the shore. The country adjacent to the coast is level and low from Point Barrow to nearly 152° W. long., a distance of more than one hundred miles, and the eye does not meet with a single hill. It appears then that the whole tract between Cape Lisburne and 152° W. long., is an alluvial plain, in which ice is found all the year round at a small depth below the surface. Between 151° and 152° W. long. there is a ridge of hills at no great distance called. But from 146° W. lat. to the mouth of the Mackenzie river four distinct ridges are seen at a distance from from twelve to thirty miles from the shore. They are probably the northern extremity of the Chipewyan Mountains, and seem to indicate that this mountain system towards its northern extremity consists of four separate ranges, divided from each other by valleys about twenty or thirty miles wide. The two most western chains, called Romanzow chain and British chain, are covered with snow, and are the mountains in winter. These chains consist of slate rocks; their summits are round and naked, and between them are narrow valleys which contain grass. No bushes nor even shrubs are met
with, and the few families of Esquimaux live on the produce of their fisheries.

The countries described under this head are claimed by three powers, the United States of America, the British, and the Russians. The Americans claim the country traversed by the Columbia river. By the convention with the Russians in 1849, their claims are limited to 46° 40' N. lat.; but they claim all the country south of that parallel to 42° N. lat. The British claim however the part of this coast. The Americans claim their claim partly on the discovery of the mouth of the Columbia river by Gray in 1792, though it appears that it had been visited in 1775 by the Spaniard Ecezas, who called it Entrada do Ecezas. A. Heilbron and Clarke, however, discovered the country drained by the southern affluents of the Columbia river, but the principal branch was first visited by agents of the Hudson's Bay Company. The opposite claims of the two nations are not yet settled. The Americans have formed no permanent settlements; but many of their citizens, who are engaged in the fur-trade, visit the southern affluents of the Columbia, as the most convenient mountain-passes over the Chippewyan range are between the upper branches of the Missouri and Lewis and Clarke rivers, but they complain much of the agents of the Hudson's Bay Company, who have permanent establishments on the Fraser river, and even on the Columbia itself. The British pass the Chippewyan Mountains between the sources of the Peace and Fraser rivers, which are only separated by a portage of 817 yards, according to Mackenzie. The claims of the Russians and the British have been settled by treaties, according to which the whole of the northern peninsula west of 141° lat. long. belongs to the Russians, as likewise a tract along the coast not far south as 56° N. lat., and the greater part of the islands forming King George III. Archipelago. The settlements of the Russians are more important than the British. In 1799 a Company was incorporated under the name of the Russian American Company, for the purpose of trading along the north-western coast, and of hunting the fur-bearing animals, especially the sea-otters. Their most northern settlement is at Bristol Bay, at the mouth of a river called Nushagak, and is called King William's. The establishment on the island of Kodiak, called Alexandria, is still more important. But the principal settlement is New Arkhan- gok, on the island of Stikka, where a town, with about 1200 inhabitants, has been built on a good harbour. The number of persons who are considered as Russian subjects amounts to more than 10,000, but only about 1500 are Europeans.

(Levis and Clarke's Travels to the Source of the Missouri, &c.; Irving's Astoria; Mackenzies Voyages through the North America to the Pacific Ocean; Voyages of Cook, Meares, Portlock, Dixon, and Vancouver; Billing's Expedition to the Northern Part of Russia, by Sauer and Saryschew; Voyage of Discovery to Siberia, the Frozen Provinces, and the Northwardly Extremes of the Eastern Arts of the World; Kotzebue's Voyage of Discovery into the South Sea, &c.; Beeche's Voyage to the Pacific and Behring's Straits; Franklin's Second Expedition to the Polar Sea; Dease and Simpson's Account of the Recent Arctic Discoveries, in the 'London Geographical Journal,' vol. viii.)

NORTH, FREDERIC, EARL OF GUILDFORD, better known by the title of Lord North (as he did not succeed to the earldom until within two years of his death), was born on 31st of April, 1730, at Kennington, in Hampshire, at Eton, and afterwards at Trinity College, Oxford. On leaving the university, he went abroad for three years, and during that time resided successively in Germany, Italy, and France, cultivating the foreign languages. Almost immediately after his return to England, he married, in 1756, Miss Ann Speke, an heiress of an antient Somersetshire family.

In 1763 Lord North was appointed one of the lords of the treasury. He was afterwards, on the formation of Lord Chatham's (as it was called by Mr. Burke) 'cessellated' ministry, Lord North received the office of joint-paymaster of the forces, his colleague being Mr. George Cooke. In the speech in which Mr. Burke so happily described the general conduct of the ministry, he especially alludes to the joint appointment of Lord North and Mr. Cooke:—'I venture to say, it did so happen that persons had a single office divided between them, who had never spoken to each other in their lives, until they found themselves, they knew not how, pugging together, heads and points, in the same truckle-bed.' (Speech on American Taxation.) Lord North had previously offered the chancellorship of the exchequer and the vice-treasurership of Ireland, both of which appointments he had refused. He became chancellor of the exchequer in 1769, and at the same time leader of the House of Commons, on commission. This too he at first declined; but he was afterwards prevailed on (we are told) by the princesses of Wales and by his father, Lord Guildford, to accept the situation. In 1770, on the duke of Grafton's retirement, he was appointed lord of the bedchamber of the chancellor of the exchequer. George III. felt himself under an obligation to Lord North for extorting him, by the acceptance of the premiership, from the embarrassment which the duke of Grafton's retirement had caused; he therefore employed his gratitude, became greatly attached to his new prime-minister, and never forgot the obligations nor ceased to have a regard for him, till the coalition of 1784.

It is an interesting trait recorded by his daughter, Lady Lindsay, in her letter appended to Lord Brougham's 'Historical Sketches' (first series), that Lord North would never allow himself to be called prime-minister. 'He never would allow us to call him prime-minister, saying there was no such thing in the British constitution.'

Lord North's ministry lasted from 1770 to 1782. Being defeated on the 22nd February, 1782, in the House of Commons, on the question of the continuance of the American war, the king gave way to the necessity of a change of ministers, and Lord North, by the exception of Lord North himself, and his supports Thurlow and Wedderburn, nearly all the intellect of the House, Burke, Fox, Dunning, and latterly Pitt (who entered parliament in 1780), contended, first, that the British parlia-

ment had no right to raise taxes other than for the services of the army and navy; and that therefore a war in enforcement of British taxes was unjust; and secondly, that even if parliament had the right, it was inexpedient to enforce it by the right of war. Lord North maintained both the justice and the expediency of the war. But every year instead of course new elements into the question of expediency; and it is now understood that Lord North himself disapproved of the continuance of the war for at least three years before his resignation in 1782. But that disapprobation was in accordance to the wishes of George III. Lady Charlotte Lindsay, in the letter already quoted, says, 'Although I do not believe that my father ever entertained any doubt as to the justice of the American war, yet I am sure that he gradually became more and more attached to the opinion.' This statement is not inconsistent with the fact that Lord North, in the very last speech that he ever made, defended the American war; and this circumstance again renders it improbable that he should ever have thought of admitting it to be unjust, which has sometimes been supposed.

The following remarks show the nature of George the Third's opposition to Lord North's retirement, and convey a just censure on the conduct of Lord North:—'He was long resolved to quit the helm, because George III. insisted on Lord North's retirement, and Lord North, having at last come to a determination, had to have quitted as soon as his mind was made up to do so with the owner of the vessel, unless he were permitted to follow his own course, and he was only kept at his post by constant entreaty, by violent expostulation, and by the vehement protestation of the distinguished prince that a proceeding which must leave him helpless in the hands of his implacable enemies, and even by promises always renewed to let him go, 'would he but remain for a few weeks, until some armament could be prepared, which, by its presence and important fact should be stated, and we have before the proofs of it under the hand of the royal sufferer to his reluctant servant's grace and favour, whose apparently fixed purpose of retirement he uses all these expedients to detain. (Historical Sketches of the Statesmen of George III. Ist series, p. 59.)

It was at the time the general opinion that Lord Bute retained his early influence with George III., and that Lord
North, nominally prime-minister, was but a puppet in his hands. [Butes, Lord.] This opinion, which contributed greatly to the general unpopularity of Lord North's administration, has been shown by Lord Brougham to be entirely erroneous. (Historical Sketches; Edinburgh Review for October, 1839.)

Lord Brougham's ministry, which succeeded Lord North's, was soon followed by an administration under Lord Shelburne, in which Mr. Pitt was chancellor of the exchequer, and which placed Lord North by the side of his former adversary, Mr. Fox, in a show that the two parties were in a state of open and much-abused coalition. [Fox.] In April, 1783, a ministry was formed by the duke of Portland, in which Lord North and Fox were appointed secretaries of state. This ministry ended its career in December of the same year, and is* succeeded, in a show of opposition, by a strong anti-Government coalition. [Fox.]

Even Mr. Eden was not among the anti-Government league, which was formed against the whole country, and deeply injured the character of the parties. [Fox.]

When Lord North retired from the premiership in 1789, he had been appointed lord-warden of the Cinque Ports. He succeeded to the title of earl of Guildford and to the family estates in 1790. Two years after he died, in the sixteenth year of his age. In the last five years he was 'Lord North, when he was out of office,' says his daughter, 'had no private secretary.

Even after he became blind, his daughters, particularly the two eldest, read to him by turns, wrote his letters, led him in his walks, and were his constant companions.

Lord North was not a man of first-rate powers, but yet of more than respectable ability. His administration of the finances, in his character of chancellor of the exchequer, was generally approved. And again, though he cannot lay claim to the title of a brilliant man, in reply to the charge which has been heaped upon this coalition, it may be observed, that because statesmen have often differed, they are not to be precluded from afterwards combining, when the questions on which they have differed are set at rest, and they are of a kind which they consider agreeable to the public interest; but it is not to be denied that this league, formed against the peace which Lord Shelburne had obtained, was hated by the whole country, and that the anti-Government coalition, which was formed against the whole country, deeply injured the character of the parties. [Fox.]

The following are interesting passages of Lady Charlotte Lindsay's letter.

From being her father's social qualities, 'Yet I think that he had really more enjoyment when he went into the country on a Saturday and Sunday, with only his own family or one or two intimate friends, then he entered into all the jocularity of his children's company, and was much attached to the ugly friend of his elder sister, and the merry entertaining play-fellow of his little girl, who was five years younger than any of his brothers. To his servants he was a most kind and indulgent master. If provoked by stupidity or impertinence, he was the last to be severe, and when he found that he was really out of humour. He had a drunken stupid groom, who used to provoke him, and who, from this common occurrence, was called by the children 'the man that puts papa in a passion,' and I think it continued all his life; putting papa in a passion, and being offended, for I believe he died in his service.' And again: 'Lord North was a truly pious Christian; and although (from his political view of the subject) I believe that one of the last speeches he made in parliament was of that momentous subject, that Christian benevolence was not to be attended with usual observances of form, and consisted more in the beautiful spirit of Christian benevolence than in outward and formal observances. His character in private life was, I believe, as faultless as that of any human being. No circumstance seems to have been more peculiar to him, nor more of those actions that appear to have been the most questionable proceeded. I am entirely convinced, from what I must own was a weakness, though not an unamiable one, and which followed him through his life—the want of power to resist the influence of those passions which arose from want of delicacy separated by intervening vales watered by rivulets and rivers, and so irregularly grouped as not to admit of description. The highest land is about Daventry, where Aubury Hill rises to the height of 804 feet above the level of the sea, and the depression of the central parts, as far west as the hills which overlook the valley of the Welland by Harrington Park and Rockingham, and as far to the south-west as the high road to Nottingham, through Higham Ferras, Kettering, and Rockingham; the south-eastern boundary, from Higham to Rockingham, is with the Cotswolds to Brackley; and some projecting or insulated portions beyond these limits, are occupied by the uppermost formations of the lowest division of oolites. At Collyweston and Easton, near the Abington, the slates are quarried for roofing-slates. They imbibe more water and retain it longer than the Westmoreland slates, but neither imbibe so much nor retain it so long as tiles do. On the slopes of the hills on the right bank of the Nene, near Higham Ferras, in Rutlandshire, the red resembling forest-marble are worked for ornamental purposes; these beds yield a shelly stone of a blue colour, sufficiently compact to be a tolerable polished stone. The principal bed of this division of the oolitic series is the greatest. Nearly the rest of the central and northern parts of the county, and the lowermost members of the oolitic series, which extend in some places to the western borders. The predominant beds are of red or rather reddish-brown ferruginous sand, intermixed with calcareous sandstone, which is quarried in some places, though it affords but an indifferent and unsightly material for architectural purposes. The western border of the county and one or two valleys penetrating into the interior are occupied by the beds. Limestone is got in great plenty in almost all parts of the county; the principal works are at Dunmow and Kingstone, near Northampton.

Good clay for making bricks and tiles is found in various places.

Hydrography and Communications.—The greater part of the county belongs to the basin of the Nene, which is the principal river in it. A small portion of the north and north-west borders belongs to the basin of the Welland; another small portion on the west side, to the basin of the Severn; and the southern extremity of the county, to the basin of the Ouse and Thames. The Nene is formed by the confluence of two principal streams. One of these rises near Arbury Hill, 2 miles south-west of Daventry, and flows eastward to Northampton, where it is joined by the other principal stream, 'the river Water,' from the village of Naseby. At Northampton the Nene becomes navigable and flows north-east through the county by or near Wellington. Higham Ferras, Thraston, and Oundle; below Oundle it reaches the border of the county, which it separates for some distance from Huntingdonshire. At Peterborough the navigable channel of the
None leaves the county altogether, but the Muscal river, or Catswater drain, which is an antient channel or arm of the river, follows the border some miles farther, till it unites with an arm of the Welland near Daventry. The length of the Nene in this county, or on the border, is about 60 miles; that of the Catswater drain about 8 miles. Its principal tributaries are the Isle (24 miles long), which passes near Rothwell and Kettering, and joins the Nene near Wellingborough, and the Melton (10 miles long), and the Rock (15 miles long), which rise in Rockingham Forest, in the north-west part of the county. These tributaries are not navigable. The Welland rises at Sibbertoft in this county, 4 or 5 miles south-west of Market Harborough, and flows to the south through the Waters of Harwell, counties which it separates successively from Leicestershire, Rutlandshire, and Lincolnshire. It passes near Rockingham in Northamptonshire, Market Harborough in Leicestershire, and Stamford and Deeping in Lincolnshire. Both the Deepen and Croydon it quits then, the latter, beyond the border of Northamptonshire, there is a channel from the Welland which unites with the Catswater drain. That part of the course of the Welland which belongs to Northamptonshire may be estimated at 48 or 50 miles. The navigation commences at Stamford, from which town there is a navigable cut to Deeping. The Welland is no Northamptonshire tributaries of any moment; its principal feeders are from the other counties, which have been mentioned. The streams belonging to the basin of the Severn are the Avon, which rises near Naseby, and has the upper part of its course in this county; and the Leam, which has a few miles of the upper part of its course on the border. The streams belonging to the basin of the Ouse are, the Ouse itself, which rises in the county of Northamptonshire near Brackley, any part of its course on the border; and the Tow, which rises in the neighbourhood of Sulgrave, near the border of the county, west of Towcester. The streams belonging to the basin of the Thames are the Cherwell or Chawell, which rises at Charwelton, 5 miles south-west of Daventry, and some of its tributaries. All these streams are small in that part of their course which belongs to Northamptonshire.

The Carlisle and Manchester and the Halifax mail-coach pass the county a few miles beyond Newport Pagnell, Bucks, and passes through Northampton to Market Harborough in Leicestershire. The Leeds mail-road enters the county near Soulbury in Bedfordshire, about 10 miles beyond Bedford, and passes through Higham Ferrars, Kettering, and Deeping.

The Carlisle and Wetherby and the Edinburgh and York mail-road crosses the northern part of the county between Stilton in Huntingdonshire, and Stamford in Lincolnshire; and the Hull and Lincoln and the Louth and Boston mail-vans turn off from the North Cross in Huntingdonshire, passes through Peterborough to Deeping.

The Grand Junction Canal enters the county near Stoney Stratford, and runs north-west, passing between Northampton and Daventry, until it joins the Oxford canal, two or three small detached portions of which are within this county. One of the summit-levels of the Grand Junction Canal is at Braunston, just within the western boundary of this county; there are two tunnels, one at Braunston, 200 feet, and the other at Northampton, 3000 yards long. There is a navigable cut from near Stoney Stratford to Buckingham, the greater part of which is within this county; there is also a double railroad to Northampton.

The Grand Union Canal unites with the Grand Junction Canal at Long Buckby, not far from the Braunston tunnel; and with the Leicester Union Canal at Foxton, near Market Harborough. There is one tunnel in that part of the canal which is in this county: it is at Crick between Northampton and Luton.

The London and Birmingham Railway crosses this county, following the line of the Grand Junction and Grand Union canals. The Woolverton station is just on the border of the county; and the Blisworth, Weedon, and Crick stations are all in it. At Crick the railroad leaves the line of the Grand Union Canal and turns off to the left at Rugby in Warwickshire. A branch railroad from the London and Birmingham, by Northampton and Market Harborough to Leicester, has been proposed; and the projected Great Northern Railway (for part of which line, viz. from London to Cambridge, an act has been obtained) was designed to pass through the north-eastern extremity of the county from Peterborough to Ely.

The county of Northampton has many advantages in point of climate and soil, and has for a long time been comparatively well cultivated and productive. The soil is generally adapted to produce both crops and pastures of a superfluity. A small proportion only of the soil is not from the thin snaffle of the soil or from a cold impervious subsoil, leaving out the natural wood, which are considerable, that which remains unproductive for want of cultivation is trifling, and could be made productive by accurate and judicious improvement. The soil, which is generally rocky, allows all superfluous water to drain down through it; and where a stratum of clay intervenes, the inequality of the surface allows a ready discharge of the water. The surface of the county, except a portion of the flat land north of Peterborough, may be, on an average, about 30 feet above the level of the sea; the greatest height does not exceed 500 feet, if we except the summits of some hills about Daventry, which may rise to the height of 300 feet above the sea.

The following elevations are from actual survey:

| River Ouse near Stoney Stratford | 103 |
| River Nen above Northampton | 113 |
| Grand Junction Canal at Blisworth and Weedon | 215 |
| Grand Junction Canal at Braunston tunnel | 230 |
| Buckley road, half a mile from Daventry | 450 |
| The summit of the hills about Daventry, supposed to be the highest points in the county | 600 |

Owing to its inland situation and the absence of lofty hills, this county is not so subject to heavy and continued rains as those which lie farther west. The surface is pleasingly diversified by gentle swells and depressions interspersed with woods and plantations. The grassy fields of the south-west are perhaps the black mould of the fen, when they have been drained and cultivated; but the most desirable for the farmer is the brown crumbling loam of the uplands. Where this is of a sufficient depth, it will produce, with little trouble, abundant crops of wheat, beans, barley, and all kinds of greens and pulse. On such land the farmer will certainly thrive, if he does not neglect his business. The pastures are both rich and sound, and the cattle grazed in them in summer repay the capital laid out on them with good interest, while those which are kept on pastures of a quarter or a year turned out in summer, or are stall-fed to bring them to a marketable state, convert the straw, which is everywhere abundant, into rich manure. These advantages are only applicable to a very good soil, but the agriculturist has to identify the difference between heavy, which does not bake hard in drying, and although consisting chiefly of minute particles of clay, lime, and sand, does not retain too much water.

There is a considerable portion of limestone rock in the county, but there is no appearance of chalk. The calcareous portion of the soil, which, in some rich land has analyzed, was found to be from 10 to 15 per cent. as a very divided state, and must greatly influence the fertility of the heavier kinds of soil, which are more retentive of water. They are found to be much more retentive of water, particularly in the month of June, when they are coveringly left in grass, as the most profitable for the farmer, if he is well skilled in selecting cattle to graze, and has a sufficient capital. For although more food might be produced from the land by tillage, and more land may be employed and fed, it is very doubtful whether the farmer would be so well remunerated for his risk, trouble, and outlay, as he is by grazing cattle. As long as the price of meat is high in comparison with that of grain, which have been the case for many years past, the grazing of the fens and low grounds in Northamptonshire and Leicestershire will always produce the greatest rent and profit.

The implements in use in this county have been much improved of late years. The old clumsy plough, with or without wheels, which was the only one known a century ago, is at present far from the limits of the little instrument, the principal parts of which are of iron. The Rutland plough with two unequal wheels attached to the beam, one to run in the furrow last made, and the other on the unploughed surface, is in general use. It is a plough
easily held, and from some experiments lately made with great care by Mr. Handley, M.P. for Lincolnshire, it appears to be of less draught than the common swing-plough without.

Three horses and a driver are used even in the very friable soils, and a Norfolk or Cleveland horse abreast, driven by reins in the plough is a rarity in the county.

The harrows, scarifiers, rollers, carts, and wagons have nothing peculiar in them. There are some threshing-machines on large farms, but the flail is still the principal implement used.

The old course of husbandry was the triennial; a clean fallow, wheat, beans, and oats on the best heavy soils, and wheat, peas, and barley on the lighter. The introduction of turnips and clover has changed the system, and greatly improved the produce. But without reckoning the clover and other artificial grass grown for hay, the soil is still inferior quality it destroys all the advantages gained by several years' lying in grass. There is a great difference between natural inherent fertility, such as that of rich loams, and that which is produced by manuring and pasturage. The first will bear much ill usage, but the latter will not.

The permanent pastures are very good in most parts of Northamptonshire, and few landlords would permit a lease to be given but one part of them. The extent of field-land of this description is reckoned in the Agricultural Report at 40,000 acres; if to this be added all that has been laid down since and the artificial grasses raised on arable land, we shall find that 80,000 acres at least are devoted to the use of clover and other artificial grasses mown for hay.

In all old pastures, ant-hills are a great nuisance: when greatly multiplied the grass on them is of no value and they take up much ground. The best mode of getting rid of them and their disease is to remove them in the form of a cross by a sharp-edged spade, the four angular pieces thus cut are separated from the ant-hill by the spade and turned back on the adjoining grass. The earth, with all the ants and their eggs, is then dug out and spread over what needs to be reduced. The remainder of the space is replanted with grass. If this be done in rainy weather before a frost, no ants will appear in the spot thus treated, and the whole pasture may in this manner be restored to a level and equal turf.

The fattening of cattle is a principal object of the Northamptonshire farmers. They have their favourite breeders, but this is only when they have some improved breed of their own. Earl Spencer, the Marquis of Exeter, and many others are great breeders, and find breeding as profitable as fattening; but the majority of farmers, who have not the same advantage, prefer buying them reared on two-drift soil, justly thinking that an animal reared on poor land and in a severer climate will thrive better and improve faster than one bred in a mild climate and a rich pasture. Hence they buy Scotch and Welsh cattle in autumn, turn them into unthreshed corn, and bring coal to them. When, after the fat beasts are sent to market during the winter, and finish them on grass next summer. These animals improve greatly, and if they do not come to a large size, they give at least a very good profit. Some few farmers feed the Scotch cattle during the winter with turnips; but generally those who can spare turnips for this purpose buy a larger sort of cattle in the autumn. Many Hereford long-horns and Durham short-horns are bought in spring, carried on at grass till near winter, and then finished with turnips, oil-cake, and straw when necessary. October 2 and 27; or if they pay for the food which they have consumed, the farmer is satisfied. Any profit in addition to the manure is so much dearer gain. The short-horn breed has of late become a favourite stock, and has almost superseded the former faver cotent breeds, chiefly from the example of Earl Spencer and the Marquis of Exeter, whose breeds of short-horns cannot be surpassed. At the Oxford agricultural meeting in 1839 Lord Spencer accepted a challenge which was offered by a well known Sussex breeder, who proposed to show 100 head of Suffolk beasts against the same number of any breed. The judges, having inspected both stocks, had no hesitation in giving their award in favour of Lord Spencer's short-horns, although one of the judges was from Sussex and fact the improved short-horn breed unites as many good qualities as can well be found in any other breed; the Hereford disproves the prize of aptitude to fatten, but the Hereford cow gives so small a quantity of milk that all the farmers in Northamptonshire who breed cattle prefer the short-horned breed. It is yet very doubtful whether the small Scotch Highland cattle do not pay as fully as well for their pasture and stall-feeding as either the Hereford long-horns or short-horns, at least on land of an average quality.

The breed of sheep most common in the rich pastures of Northamptonshire is the long wool, and the farmers have long paid for its quality and thrift. Long wool has been in request, and sells dearer, in proportion to the weight of the fleeces, than the finest short wool, scarcely any other breeds are in repute. The South-downs, on account of the flavour of their flesh, may dispute the prize of aptitude with the short-horned, and many of these sheep are kept in the same flocks. The short-horned breed unites as many good qualities as can well be found in any other breed; some very fine flocks of breeding eves are kept in the county, and rams are bought, or hired for the season at very high prices, from those whose chief business it is to rear short-horns.

There are many considerable estates in Northamptonshire, but the farms are in general not very, large. They are usually let from year to year, with the understanding that the tenant shall not be removed as long as he pays a fair rent and cultivates the land properly. This is very generally the case, which is in settlement, where they are liable to be sold, the tenant has no great security, and will not lay out much capital in useful improvements, of which he may not reap the benefit.

More leases have been granted of late years, and a more improved state of cultivation has been the consequence. The farm-buildings were described by Mr. Donaldson and Mr. Pitt, in their Surveys, as by no means worthy of the fruitfulness of the soil, being inconvenient both as to architecture and situation. In the last two years there is now a great fest improvement. Many excellent farm-buildings and houses have been erected; and the respectability of the tenants has increased in proportion. The very large barns formerly thought indispensable to house the crop are in now a day is no longer so strict and are in fact a great deal better preserved by a covering of thatch. Frames of wood on stone or iron pillars receive the corn, which is laid with the ears inward, and forms a round or square stack ending in a cone or pyramid, which is covered with straw and well secured. It is the practice of farmers not to cut the grass before the frost, and to lay it by in the fields to be spread out on the ground. The hay is then mowed, and made into a dry bundle.

Gardens and orchards are not a remarkable feature in this county. Little or no cider is made, barberry supplying the place of this fruit. The woods are small and have been disposed of as plantations have been made in the neighbourhood of the numerous residences of the nobility and gentry. The most considerable forest is that of Rockingham, part of which has been converted into farms from time to time. These woods have been cut so as to increase the yield of timber, and have made far more productive than they have been. The pasture of deer and cattle, and the customary rights which existed from time immemorial, have prevented the increase of timber. The navigation of the Grand Junction Canal, which it is in the power of the proprietors to enlighten, has much lowered the price of underwood for fuel; and the fall in the price of oak timber since the peace has likewise diminished the value of woods.

The following are the principal fairs held in Northampsonshire:—Broughton Green, June 24, 25, 26, general fair; Brockley, Wednesday after February 25, April 24, Wednesday after June 22, December 11, horses, cows, sheep; Briggstock, April 25, September 4, cattle, Brixworth, Whit Monday; Daventry, Easter Tuesday, May 6, August 3, 4, sheep, rams, 3, 4, 5, Monday after July 6; Higham Ferrers, March 7, June 28, Thursday before August 5, October 11, December 6; Kettering, Thursday before Easter, Friday before Whit Sunday, Thursday before October 11, Thursday before December 26; Northampton, January 9, 20, April 4, 5, May 6, June 19, August 5, 26, November 28, December 19, cattle, Oundle, February 25, Whit Monday, August 21, October 12; Peterborough, July 10, October 2, horses; Rockingham, September 25, cattle, horses; Rothwell, Trinity Monday, last a week or two.
ter. May 15, October 29, cattle; Wellingborough, Easter Wednesday, Whit Wednesday, cattle, October 29, cattle and cheese; Yardley, Whit Tuesday, horned cattle.

Division, Towns, &c.—The county of Northampton, at the time of the 1881 census, contained thirty-three hundred; but the number has been reduced. There are now about twenty hundreds, the names of which, with their situation in the county, their respective areas, and their population in 1831, are as follows—

<table>
<thead>
<tr>
<th>Hundred</th>
<th>Situation</th>
<th>Acres</th>
<th>Pop. 1831</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chipping Warden</td>
<td>W.</td>
<td>21,370</td>
<td>4,697</td>
</tr>
<tr>
<td>Clecey</td>
<td>S.E.</td>
<td>26,620</td>
<td>7,413</td>
</tr>
<tr>
<td>Corby</td>
<td>N.W.</td>
<td>59,400</td>
<td>10,434</td>
</tr>
<tr>
<td>Fawsley</td>
<td>N.</td>
<td>49,190</td>
<td>9,719</td>
</tr>
<tr>
<td>Gayton, Norton</td>
<td>S.E.</td>
<td>22,080</td>
<td>5,333</td>
</tr>
<tr>
<td>Guildsborough</td>
<td>W.</td>
<td>43,260</td>
<td>7,860</td>
</tr>
<tr>
<td>Hamford-hoe</td>
<td>Central</td>
<td>16,530</td>
<td>8,178</td>
</tr>
<tr>
<td>Higham Ferrers</td>
<td>E.</td>
<td>30,410</td>
<td>8,236</td>
</tr>
<tr>
<td>Hulcote</td>
<td>Central</td>
<td>41,799</td>
<td>12,435</td>
</tr>
<tr>
<td>King Sutton</td>
<td>S.</td>
<td>48,250</td>
<td>13,090</td>
</tr>
<tr>
<td>Naseby (or Peterborough)</td>
<td>Liberty</td>
<td>52,860</td>
<td>15,824</td>
</tr>
<tr>
<td>Navisford</td>
<td>N.</td>
<td>13,090</td>
<td>2,735</td>
</tr>
<tr>
<td>Northampton Grove</td>
<td>Central</td>
<td>34,160</td>
<td>5,790</td>
</tr>
<tr>
<td>Orlingbury</td>
<td>Central</td>
<td>26,900</td>
<td>5,664</td>
</tr>
<tr>
<td>Polebrook</td>
<td>E.</td>
<td>19,480</td>
<td>3,537</td>
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<tr>
<td>Rothwell</td>
<td>N.W.</td>
<td>42,640</td>
<td>7,800</td>
</tr>
<tr>
<td>Spinel</td>
<td>Central</td>
<td>19,170</td>
<td>2,191</td>
</tr>
<tr>
<td>Towcester</td>
<td>Central</td>
<td>12,990</td>
<td>2,736</td>
</tr>
<tr>
<td>Wilby Brook</td>
<td>N.</td>
<td>27,490</td>
<td>5,790</td>
</tr>
<tr>
<td>Wymesworth</td>
<td>E.</td>
<td>36,060</td>
<td>8,857</td>
</tr>
</tbody>
</table>

646,810 179,376

There are in the county, the county town and market town of Northampton; the city of Peterborough; the borough and market towns of Brackley and Higham Ferrers; and the market towns of Daventry, Ketton, Oundle, Thrapstone, Towcester, and Wellingborough. Kingsclere, Northampton, Rothwell, and Wellingborough are all boroughs. [Brackley; Peterborough; Northampton; Wellingborough; Towcester; Oundle; Thrapstone; Ketton; Daventry; Rothwell; Wellingborough.]

The county-town, Northampton, is locally in the hundreds of Grafton and Northampton, on the north bank of the Nene, 67 miles from London. Its origin is unknown. In the peace between Alfred and the Danes it is likely that Northampton was included in the Danish territory, and was one of the four hundred which formed a district. In a.d. 918 or 919, and again in 921, the Danes of Northampton (or simply Hampton, Hamtonia, as Henry of Huntingdon calls it, though Florence of Worcester calls it Northamton) were defeated and dispersed by a force led by the Earl of Devon and the Earl of the Elder. In the reign of Ethelred II. Northampton was nearly ruined by the Danes (a.d. 1010), and about the close of the reign Edward the Confessor it suffered from the Northumbrian army under Morcar, or from the king's troops under hapless Henry I., who was at that time on the march, and on whom the conqueror conferred the earldom of Northampton, built a castle here: and in the following reigns several ecclesiastical councils and parliaments were held in this town. In the reigns of Richard I., John, and Henry III. there was a mint at Northampton. In the reign of Henry II. (a.d. 1174), the townsmen, who sided with the king against his children, were, with the royal troops, defeated by Ankiell Mallore, a supporter of the young prince. In the civil wars of John, Northampton castle was held for the king, and besieged in vain by the barons (a.d. 1215). Toward the close of the king's reign the castle was given to Fulke de Brent, and in a conflict between his soldiers and the townsmen a considerable part of the town was captured and burnt. In the troubles of the close of Henry III., Northampton, held by the barons, was taken by the king (a.d. 1264). In 1265 Northampton was taken by the barons, but recovered by the king's party. In the commencement of the war of the Roses, a great battle was fought near the town (10th July, 1460), in which the Lancastrians were defeated by the earl of March (afterwards Edward IV.) and the earl of Warwick. The king, Henry VI., was taken; and the queen and the young prince of Wales escaped with difficulty. In the civil war of Charles I. Northampton was taken by Lord Brooke and for-
and by the double railroad communicating with the Grand Junction Canal. The principal market-day is Saturday; it is a large cattle-market; there are two subordinate markets in the week; there are eight yearly fairs, three of them being cattle fairs, the others being for general merchandise, and yet, for general cheese and mutton.

The assizes for the county are held here, also the quarter-sessions for the division, and the court of commission for members of parliament for the southern division of the county. There is a court of record for the town, sitting on sittings held on a house on the north of the town. Northampton is a borough by prescription; it is mentioned as a borough in Domesday Book. The governing charter is of 36 Geo. III. By the Municipal Act, the borough has been divided into wards, and has six aldermen, a portion of which has been that of St. Peter is a rectory united with the perpetual curacies of Kingsthorpe and Upton, of the clear yearly value of 860l., with a glebe-house.

There were in the borough, in 1833, two infant-schools, with 456 scholars, under the Minute-church-school act, and six endowed schools, with 170 children; a national day and Sunday school for the county, with 372 children in the week and 987 on Sunday; a Lancasterian school, with 569 children; twenty-seven other day-schools, with 3602 scholars; three day-schools, with 206 scholars; and fourteen Sunday-schools, with 2186 scholars. Three of the endowed schools are for boys and one for girls; the boys are clothed as well as educated; the girls are entirely supported.

A great advantage is in the hundred of Higham Ferrers, 63 miles from London. The area of the parish is 2250 acres; the population in 1831 was 965, more than a fourth part agricultural. The town stands on a rocky eminence half a mile from the eastern bank of the Nene, and consists chiefly of one long street running north and south. Its elevated site renders it clean and healthy; but the houses are generally poor, and the streets are not lighted. It has a large and curiously church, formerly collegiate, having two nave, of equal height, with small clerestory windows in one of the cases. The south aisle, and representing three rows of piers and arches, and four spaces. Some of these piers and part of the tower are of early English character, but most of the church is of later date. Some of the windows are, therefore, carried up in the fourteenth century, and others are of perpendicular character. The western entrance is much enriched with sculpture; and the church contains an ancient font, some good wooden screen and stall work, and some painted glass. The upper part of the tower is of later date, and is surmounted with a crocketed octagonal spire. Near the church is a grammar-school (a fine stone building), and a head-house or almshouse, founded by Archbishop Chicheley, which has some portions of good perpendicular character, but much mutilated. There are also some remains of the ancient college, a portion of which has been converted into a dwelling-house. There is a town-hall of modern erection. The principal business of the place is shoe-making; the making of lace, which formerly was much followed, has declined since the introduction of machinery in 1832. Chelveston and Caldecott, of the clear yearly value of 245l., with a glebe, is a Worcestershire Methodist chapel. There were, in 1833, six dame-schools, with 37 children; the endowed grammar-school, with 57 children; one other day-school, with 26 children; and two Sunday-schools, with 246 children.

Daventry is in the hundred of Fawley, 72 miles from London. The area of the parish (including the hamlet of Drayton) is 4090 acres; the population, in 1831, was 3646, a very small portion agricultural. This town probably rose from the decay of the neighbourhood of the Roman stations of Bennavenna and Isanavet. During the civil war of Charles I. the neighbourhood of the town was the scene of some skirmishes. In 1660, General Lambert, who had collected a force at Daventry, to oppose the designs of General Monk for the restoration of Charles II., was taken prisoner near the town by Colonel Ingoldsby.

The town is an eminence, and consists of two principal streets and some smaller ones, partially paved and lighted; the houses are generally neat and well built. The church is a modern building, consisting of a chancel. There are meeting-houses for the Independents and Wesleyan Methodists. The town has no manufacture, except that of whips. There is a market on Wednesday, and there are annual fairs, chiefly for cattle and horses. The Dissenting Academy at Northampton was removed to Daventry on the decease of Dr. Dodridge, A.D. 1752 [DODRIDGE, PHILIP], and continued there under the charge successively of Dr. Ashworth, Mr. Robins, and Mr. Belsham, till A.D. 1796, when, in consequence of the resignation of Belsham, [BELSHAM, THOMAS], it was removed to Wymondley. It has since been transferred, under the designation of Coward College, to London.

Daventry is a borough by prescription; the corporation, under the Municipal Act, 1742 (1791), has 18 councilors, who are the aldermen and twelve councillors. By that Act, the town is not to have a commission of the peace, except on petition and grant. There were, before the Act, sessions held once a year. There is a small gaol, built within these few years. The corporation is governing.

The living of Daventry is a perpetual curacy, of the clear yearly value of 344l., with a glebe-house.

There were, in 1833, two day-schools, partially endowed, with 12 children; seventeen other day-schools, with 376 children; a national school, with 152 children, partly supported by an endowment and by subscription (some of the children are clothed); and four Sunday-schools, with 511 children.

Kettering is in Hunts, 74 miles from London. The area of the parish is 2840 acres; the population in 1831 was 4999, about one-eighth agricultural. The town is on the slope of a hill, at the foot of which runs a small brook, a feeder of the Ise. The market-place is spacious, and is surrounded by wysteria and respectable shops. The church is a large and handsome building of perpendicular character, consisting of a nave, side aisles, and chancel, with a very fine tower and rich hexagonal crocketed spire at the west end. The west door and a four-light window over it are ridiculed with pilasters of the same character.

There are several dissenting places of worship. Wool-stapling and wool-combing are extensively carried on in the town; there is a considerable manufacture of shoes; and that of silk stockings has been lately introduced; about 200 men were, in 1831, employed in these last two branches of industry. The market is on Friday, and there are three yearly fairs for live-stock and pedlery. The living is a rectorcy, of the clear yearly value of 760l., with a glebe-house.

There were, in 1833, a free grammar-school, with a good endowment, containing 37 boys; another endowed school, with 22 girls; nine other day-schools, with 194 children; one boarding and day school, with 22 girls; two national day and Sunday schools, with 195 children in the week and 298 children in term, for 89 scholars; and four Sunday schools for 130 children. Besides these there are several schools for teaching lace-making.

Oundle is in Polebrook hundred, 81 miles from London. The area of the parish, including the hamlets of Ashton, Fawsley, and Eton, with the village of Hemington, is 2993 acres. The population, in 1831, was 2450, nearly one-third agricultural.

The town is on the slope on the left bank of the Nene, which here makes a considerable bend, nearly surrounding the town, and is crossed by two bridges. It is a market-town that on the north-east side, distinguished as 'the North bridge,' over which the road to Peterborough passes, is a fine bridge of several arches; connected with it is a causeway, raised on arches, to secure a passage over the flats when the waters are out. The streets are
Wellingborough is in the hundred of Nassauds, 19 miles from London. The area of the parish is 4400 acres; the population, in 1831, was 4688, about one eighth agricultural. The town is on an eminence just above a large clump which flows into the Nene, and from half a mile south of the town and half a mile from the left bank of the Nene itself. The town was rebuilt in 1738, after a dreadful fire. It now consists of a number of streets, irregularly laid out, the principal of which meet in the market-place; they are lighted, sal, and several of the buildings are of peculiar character, which are in a state of desecration. The houses are for the most part built of a red and stone, on which rock the town stands. The church is large and handsome, and of various styles of architecture. A south door is Norman; the tower and spire at the west end are of the same date; the spire is 291 feet high, and is that of boots and shoes. Many of the females are employed in making lace, though that branch of industry has much declined. A silk-mill has been established within a year. The market is on Thursday, and is a very considerable trade. The market for corn is carried on the Tuesday, for live-stock, and a third for live-stock and cheese. Petty sessions for the division are held every week in the town-hall. The living is a vicarage, of the clear yearly value 400/. There were, in 1833, sixteen infant or dame schools, with 187 children; an endowed grammar-school, with 44 boys; a 'lower school,' supported from the same endowment, with 100 boys; another free-school, with 60 children; two Lancasterian schools, taught by the same mistress, each held three times a week, by a man and a woman, attended by 52 girls; two other day-schools, with 48 children; and five Sunday-schools, with 797 children.

Wellingborough got its name from the wells or springs about the town. One of these, 'the red well,' a chasteberry, is formed in a large natural pool, and is annually resided here, in 1626, under tents, in order to have the benefit of it.

Kingstcile is in Wiltshire, between Rockingham and Peterborough. The area of the parish is 4460 acres; the population, in 1831, was 2969, chiefly agricultural. Some antiquaries place here the station Lactodorum of the Antonine Itinerary; at any rate the termination 'ester' indicates that it was a Roman town. Numerous coins found here, especially on an artificial mound called Berrymont Hill, north-east of the town, confirm this conclusion. Traces of the Saxons are evident, and the town was fortified by Edward the Elder (A.D. 921) to defend the town from the Danes, yet discernible. Kingstcile is situated on the right bank of the Tow, and consists principally of one long street on the road from London to Coventry and Birmingham, which is 1173.

The church is a neat building in the early English style; there are three dissenting places of worship, and three almshouses. The chief trade of the place is in boots and shoes. There is a large market on Thursday, and the market for live-stock and general merchandise, which is held on Tuesday. The market is well furnished with a large house. There were, in 1833, four dame-schools, with 30 children; a day-school, with 50 boys, partly or wholly supported by an endowment; four other day-schools, with 137 children; and four Sunday-schools, with 490 children.
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...Northampton, the town is situated on the southern slope of a hill: the ruin of the market-house, begun by Sir Thomas Tresham, A.D. 1577, but never finished, is a remarkable object; it consists of a square area surrounded by large pointed arches, designed for rings of rooms with boarded windows over; the whole is ornamented with Doric pilasters, shields with arms, &c. The church has an embattled tower and a fine doorway of early English character. There is a large yearly fair for live-stock, peddery, and linen; and persons are engaged in weaving blankets. The living is a vicarage, united with the chapelry of Orton, of the clear yearly value of 14s. 6d.

There were, in 1833, three infant or dame schools, with 76 children; seven day-schools (one endowed, another a national-school, and two others supported by the parish) with 238 children; and three Sunday-schools, with 431 children.

Weldon, distinguished as Great Weldon, is in Corby hundred, between Rockingham and Oundle. The parish has an area of 2330 acres, with a population of 1852, half agricultural. Including the hamlet of Little Weldon, the area is 3680 acres, the population 778. The houses are chiefly built of stone. There are four fairs in the year for general merchandise. The living is a rectory, of the value of £333 per annum; the income of the glebe is £108. There were, in 1833, two dame-schools, with 36 children; one day-school, with 30 children; and a national-school, with 70 children in the week and 96 on Sundays.

Braunston is a populous village in Fastoe hundred, near the villages of Daventry and Oxford, and contains about 3 miles north-west of Daventry. The church is large and handsome, with an octagonal crotched spire 150 feet high. There is also near the upper end of the village a stone cross, surmounted with an entablature decorated with the heads of four evangelists. Braunston had, in 1831, 1360 inhabitants.

Weedon-beck is also in Fawsley hundred, 4 miles south-east of Daventry. Its distinctive epithet 'Bec' was derived from the circumstance of a religious house being established here as a dependency of Bures in Normandy. It is sometimes also called Weedon-in-the-Street, from its situation on the Walling Street. Wulfhere, king of Mercia, had a palace here. The church is an ancient building, and contains portions in the Norman and Decorated styles, but the church built on the site of an abbey of the Cluniac order. It is sometimes also called Weedon-in-the-Street, from its situation on the Walling Street. Wulfhere, king of Mercia, had a palace here. The church is an ancient building, and contains portions in the Norman and Decorated styles, but the church built on the site of an abbey of the Cluniac order.

Earl's Barton is in Hamfordshire hundred, 4 miles south-west of Wellingborough: it had, in 1831, 977 inhabitants. The church is very ancient, and has several peculiarities of structure and probably of Anglo-Saxon architecture, and very rude. It is divided into four stories, each of which is constructed with large but thin upright stones, disposed like the frame or wood-work of old timber-houses, and having the intervals between every two fifths, or a small stone window, and rubble. There are a small west door in the lower story, and one or two small windows, unglazed, in the stories over it; and in the fourth story two large openings of several lights; the lights have semicircular heads, and are divided by mullions and disposition of arches.

The summit of the tower, which is embattled, is of late date. (Britton's Architectural Antiquities.) The southern doorway is of highly-enriched Norman workmanship.

Rushden, in the hundred of Rushden, is 4 miles north-west of Higham Ferrars: it had, in 1831, a population of 1370. The church is large and handsome, with a remarkably fine and lofty tower and spire. The steeple is early English, and is one of the best specimens of that style in the county. The church has some early English features, some decorated windows, and some of perpendicular character.

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Northamptonshire was antiently included in the diocese of Lincoln, the see of which was removed afterwards to Peterborough. The diocese of Peterborough was taken out of this in the reign of Henry VIII. It is proposed by the Bishop Commissioners to augment the diocese of Peterborough by the addition of the county and archdeaconry of Daventry. The county is in the Midland circuit. The assizes are held at Northampton, the first town on the circuit to
which the judges proceeded. The quarter-sessions are held
at Northampton and Peterborough. The county gaol and
house of correction is at Northampton. It comprehends
eleven yards, eleven airing-rooms, twelve day-rooms,
and seven work-rooms. There are borough gaols at North-
ampton and Peterborough. The number of houses commis-
sioned in the year preceding Oct. 1834, was 653; in 1834, 444;
and in 1836, 436.

Nine members were returned to parliament before the passing of the Reform Act, viz. two knights of the shire, two members for each of the city of Peterborough, and the boroughs of Northampton and Brackley, and one member for the borough of Higham Ferrers. By that act the number of members was reduced to eight, Brackley and Higham Ferrers being disfranchised, and the county for Northampton divided into two divisions, each having two members.

The northern division of the county consists of the liberty of Peterborough, otherwise the hundred of Nassagburgh, the hundreds of Willybrooke, Polebrook, Holvoe, Navaford, Corby, Pigham Ferrers, Rothwell, Hamford, and Or-
lingby. The court for the election of the members is held at Ketton; and the polling-stations are Kettering, Peterborough, Oundle, Wellingborough, and Clipston. The southern division comprehends the hundreds of King’s Sutton, Chipping Warden, Great Westerton, Clecley,

Wardour, Claycoton, and Little Barford; the villages in those of the Iceni (Ciria), who dwelt to the east. Perhaps these nations may have occupied each a portion; and the Dobuni (Dobunov) of Gloucestershire and War-
wickshire may have also had some parts of the western
border. In the Roman division of Britain, Northam-
ptonshire was included in the province of Flavia Caesariensis.

Wallington Street crossed in a north-west direction through or near Towcester and Daventry; the Via Devana, another Roman road, parallel to Wallington Street, crossed it near Oundle and Rothwell. Both the Ermine Street and the course, crossed the north-eastern extremity from Castor, on the Nene, to Stamford; and one or two other ancient roads had a portion of their course in this county. Wallington Street for many miles from the summit of
Borough Hill near Daventry, and on that road it is incorporated with the modern high-road. Parts of the Ermine Street are conspicuous between Castor, on the Nene, and Upton, and again in the parish of Barchall, not far from Stamford. Several Roman stations are usually considered to have been in the county, viz. the Tripontium, Bennavenna, Isanvatia, and Lactodorum of Antoninus; and the Brinave and Durnomagus of Richard of Cirencester.

Tripontium is now by pretty general consent fixed at or near Dus Bridge and Dow Bridge, which crosses the two counties of Leicestershire and Northam-
ptonshire. Reynolds (Iter Britanniarum) fixes it at the village of Lilburn in Northamptonshire, not far from Dow
Bridge, and about half a mile out of the line of Wallington Street, and is the true one, which perhaps a town was called. *The area of this fort con-
tains about the fifth part of an acre. The southmost part is a square piece of ground, appearing to have been raised, and in its present form to the four quarters of the
heavens. At the south-east and north angles, there are some
locks which have the appearance of bastions. From one
angle to the other runs a bank of earth, and a like bank
along the eastern and western sides. To the north-west is a high hant hill, and from the summit, on the hill, there
there stood a fort or watchtower, of which some small pieces of the
churches of Lilburn and Clapton are said to have been
built. Causeys, pavements, and ruins often dug up, show
that town to have been formerly larger than at present.

*In the account of Leicestershire, it is stated that Tripontium was an
hour at Caust and Dow Bridge, and is artifici-
Peldington, on the road from London by Newport Pagnel to Northampton, pavements have been dug up; and at Cogenhoe, on the right bank of the Nene, below Northampton, some Roman coins and an urn were found. At Weedon-Beck are the remains of a post or station, a large camp (called Caslev Dykes), and several antiquities; and on Arbury Hill, in the parish of Deaby, near Daventry, is a rectangular camp, generally supposed to be Roman. At Barack, between Peterborough and Stamford, antiquities have been dug up, and at Weldon have been discovered extensive traces of a large house of the last of the Romans. There are traces of a large mansion or of a town. At Guils-rough, north-west of Northampton, and between Aynhoe and Newbottle, in the southern extremity of the county, there are camps, probably Roman.

Unlikely as several of these posts belonged to the line of defence formed by Ostorius. Durobrivum may have been the first station above the fens, which formed of themselves a sufficient defence on that side. Ringstead, Chester, Weedon-Beck, and Arbury Hill, parts of probably the work of Ostorius, and the post of Isanavatia or Bennavenna we may reasonably suppose to have been fortified by him. At Isanavatia, or at Arbury Hill, at the head of the Nene, the line of defence probably turned southward, past Brimnave, or Chipping, of which there are traces in that neighbourhood may have formed part of it. At what point it turned westward and joined the Severn can scarcely be determined. Raynsbury camp, in the south part of the county, was probably a post on the road from Oxford to Stanwick, and there is a fort at Oxford, and the post of Isanavatia or Bennavenna was probably the work of Ostorius.

The county was included in the Anglo-Saxon kingdom of Mercia; and Wulfhere, king of Mercia, had a palace at Weedon-Beck. In the invasion of that kingdom by the Danes, the monastery of Medeshamstede, now Peterborough, was destroyed, and the church of St. Mary, probably the oldest church in the county, was divided between the West Saxons and the Danes, the former having all to the south-west and the latter all to the north-east of Watling Street (A.D. 880 to 883). The Danish part was probably dependent on the Danes of Northumberland, but the West Saxon part was governed successively by Ethelred and his widow Ethelfleda, daughter of Alfred, upon whose death (A.D. 920 or 921), Edward the elder, king of Wessex, assumed the direct administration of the government. He fortified Towcester, parts of Watling Street, and therefore a frontier town, and reduced the Danes of Bedford and Northampton to submission (A.D. 921). At the commencement of the reign of Edmund I., the Danes, whom Athelhelm had subdued, revolted (A.D. 936), and the burghs, including those of Northamptonshire, submitted to the supremacy of Edmund. By a subsequent treaty, all to the north-east of Watling Street was ceded by him to his Danish competitor Anlaf, but was recovered to the Anglo-Saxons by Edmund's death. Thus the county was in the county of Mercia, independent of the Conquest; though several towns or other places are mentioned in the Saxon Chronicle or other ancient records.

Of the Anglo-Saxon period there are memorials in Brixworth church and the tower of Earl's Barton church; the former will be presently noticed; the latter has been already pretty fully described. Upon the Conquest different lordships in the county were granted to the families of St. Liz and others. Simon de St. Liz built the castles of Northampton and Rockingham; William the Conqueror is thought to have built Rockingham Castle; and Thorold, a Norman, appointed abbot of Medeshamstede, or Peterborough (which had been rebuilt after its ruin by the Danes, King Edgar and his queen, with the archbishops of Canterbury and York, and other bishops and clerics, and under the direction of the foundation of the new building), erected a castle within the precincts of the abbey, probably for defence against Rebellion le Wake, who had occupied the Isle of Ely. The defence was insufficient; the town was burned and the abbey plundered by the Danes, the allies of Rebellion.

In the reign of John (A.D. 1212) the members of Magdalen College retired to Brackley Hospital, which was in their possession; and in the time of Henry III. many students who, from various causes, had left Oxford, took refuge at Northampton, where steps were taken to establish a new foundation. A similar emulation from Cambridge to Northampton occurred in the same reign, but a royal mandate compelled the students to return. Both Henry III. and Edward I. frequently resided at Northampton; and in the reigns of Edward II. and III. and Richard II. several parliaments were held; and in the last of the men of the poll-tax, which led to Tyler's rebellion. The battle of Northampton, in the civil war of the Roses (A.D. 1460) has been noticed. Another battle was fought in this county between the Lancastrians and Yorkists, probably under the intrigues of the earl of Warwick, rose against Edward IV., under a leader called Robin of Redesdale (A.D. 1469). These insurgents defeated a Royalist force, under William Herbert, earl of Pembroke, at Edgecote, on the border of the county towards Oxfordshire. Four thousand of Pembroke's men fell; and himself and other leaders, being taken, were beheaded next day at Northampton. This was the last event of importance in the county before the Reformation.

An ancient ecclesiastical monastic or castellated architecture the county possesses several specimens. Brixworth church, between Northampton and Market Harborough, is one of the most remarkable. It consists of a nave, south aisle, chancel, west tower, and staircase turret on the western side of the tower. The present nave has been added and is greater in width than that an addition to the original building, but from the foundation of an aisle discovered on the northern side, it appears that the present nave consists of the eastern extreme of the original building, and that the present portion is not the whole of the original chapel, and that the present chapel is a subsequent addition. The walls are mostly built with rough redstone rag, in pieces not much larger than common brick, and all the arches turned, and rough courses of them covering the brick or the stones they may be called, precisely similar in quality and size to those found in Roman works discovered in this county; and over the balusters of the window looking from the tower into the nave these bricks are used as in its site. (Rick's Monumental Architecture.) The church has undergone great alterations; the arches opening from the original nave into its aisles have been for the most part stopped up; the stair-tower, the belfry of the tower and a lofty spire, and an aisle on the south side of the nave added in later times; windows of various dates, sizes, and styles inserted; and other changes made at various times from the Conquest to the Reformation. It is probable that this church was erected in the time of the Romans; and if so, it is the only church in that part of the county, as well as the most ancient of our ecclesiastical edifices.

Brigstock Church, between Oundle and Rothwell, is another curious church, but the ancient work forms only a small proportion. The tower is of very rough masonry, and has roughly-built round staircase turret on the west side, like Brixworth. The arch into the nave has large plain blocks for imposts and a projecting stone round the arch; the tower opens into the north aisle by a semicircular-headed plain door, with a small window over it. There are several additions, as a belfry story and spire, of a later date, which present several interesting features.

Barnack church, near Stamford, has a tower probably Anglo-Saxon. The lower part of it is on the site of the old St. Peter's Church, Peterborough, which had been the site of the abbey of St. Mary; and has very much built round staircase turret on the west side, like Brixworth. The arch into the nave has large plain blocks for imposts and a projecting stone round the arch; the tower opens into the north aisle by a semicircular-headed plain door, with a small window over it. There are several additions, as a belfry story and spire, of a later date, which present several interesting features.
Helpstone, Kingthorpe, Maxey, Moultan, Peaskirk, Pitsford, Polbrock, Wooden-Back, and some others, have more or less of Norman architecture in them. Of these, Castle Ashby, Cotterstock, Maxey, Polbrock, Helpstone, and Pitsford are especially deserving of notice. Barnwell St. Andrew's, Aldwinkle All Saints, Canons Ashby, Easton, Fotheringhay (formerly a collegiate), Lowick, Raunds, Rushden, St. Mary's Church at Stamford Barum, Stanwick, King's Sutton, Tichmarsh, Wartling, Whiston, Wilby, and Wollaston are also worthy of notice for their beauty or for the curious features they present. There are some ruins of the collegiate buildings adjoining to Fotheringhay church.

Of St. James's abbey, Duston, near Northampton, founded by William Feverel, natural son of William the Conqueror, for Black or Austin canons (yearly revenue, at the dissolution, 213L 7s. 4d. gross, 175L 19s. 2d. clear), and of Pipewell Cisterian abbey, Great Oakley, near Rockingham (yearly revenue, at the dissolution, 387L 8s. 6d. gross, 285L 11s. 8d. clear), only the foundations and traces of the walls are remaining. A portion of the church of Catesby Benedictine nunnery, near Daventry (yearly revenue, at the dissolution, 145L 8s. 6d. gross, 132L 19s. 11d. clear); a portion, supposed to be the refectory, of the Cluniac priory at Daventry (gross yearly revenue, at the dissolution, 236L 4s. 6d.); and the church of the priory of the canons at Canons Ashby, between Northampton and Banbury (revenue, at the dissolution, 127L 19s. gross, 119L 0s. 4d. clear); the kitchen and a few other vestiges (now incorporated in a farm-house) of Sewardesley Cisterarian priory, near Towcester (yearly revenue, at the dissolution, 18L 6s. 11d. gross, 12L 6s. 7d. clear), are the principal monastic remains. Queen's Cross at Hardingstone has been noticed. Geddington Cross, near Kettering, another of those erected by Edward I, is in memory of his wife, is of triangular shape, elevated, and divided by numerous recesses and pilasters, the lower one solid, adorned with six shields charged with arms and other sculptured ornaments; the compartment above consists of six pilaars rising from an embattled turret, and supporting six decorated canopies; beneath these canopies is a statue of the queen. The upper compartment is richly adorned.

The castellated ruins are few. These are the earth-works of Northampton, Higham Ferrars, Brackley, Fotheringay, and perhaps one or two others, and the gateway of Stocking. Barnwell Castle is a fine and interesting ruin: it consists of four massive round towers, with their connecting walls enclosing a quadrangular court: the western wall is dilapidated. The grand gateway, which still remains, is the only remaining one, and the entrance gate and one of the lower gres, adorned with shields charged with arms and other sculptured ornaments; the compartment above consists of six pilaars rising from an embattled turret, and supporting six decorated canopies; beneath these canopies is a statue of the queen. The upper compartment is richly adorned.

There are a few ancient mansions. Drayton House, Lodgeley, is, of the age of Henry VI. It retains many of the features of an ancient castle. Fawsley House, 3 miles south of Daventry, the ancient seat of the Knightly family, is an incongruous pile of various dates. Northborough manor-house, between Peterborough and Market Deeping, now a farm-house, is of decorated English character, and some of its portions and details are very beautiful.

In the reign of Queen Elizabeth this county was the scene of the execution of Mary of Scotland, who was tried, convicted, and beheaded at Fotheringhay. This castle was entirely demolished by order of James I when he came to the throne. This county possesses several memorials of the public men of Elizabeth's time. Burleigh or Burghley House, near the county town of Stamford, is held by the lord Burleigh. The castle, being the most part by the great Lord Burleigh, though many additions and alterations have been made by subsequent possessors. It is a vast pile, displaying magnificence rather than taste. Kirby Hall, Grettton, near Rockingham, was built by Sir Christopher Hatton, but it has been materially altered since. The more ancient parts of Castle Ashby, about 6 miles east of Northampton, were erected by Henry lord Compton. The offices of the manor-house of Ashby St. Ledger (near Daventry) contain a small room in which the gunpowder plot in the time of James I was concocted. The house belonged to Catesby, one of the leaders in the conspiracy.

The battle of Naseby, which decided the civil war of Charles I, was fought in this county (A.D. 1645). The king had a fortnight before taken Leicester by storm, and, marching southward by Harborough to Daventry, compelled Fairfax to raise the siege of Oxford in order to oppose him. On the approach of the parliamentary forces under Fairfax and Cromwell to Northampton, Charles retreated to the neighbourhood of Harborough, but finding his forces unequal to the occasion, retired to the castle of Stamford, near the Royalist centre in the flank and rear. The victory was decisive: the Royalists had 800 killed and wounded, the Parliamentarians rather more; but they took 4000 prisoners and all the artillery, besides other spoils of the greatest magnitude.

After the king had surrendered himself to the Scots at Newark, and been delivered into the hands of the Parliamentary Commissioners, he was brought to Holkemy, or Holmby House, about 6 miles north-west of Northampton. From this place he was carried off by Cornet Joyce, at the head of a party of horse, and taken to the army. Holkemy House, which had been built by Sir Christopher Hatton at the time of Elizabeth, was demolished by order of the parliamentarians.

The only struggle which attended the restoration of Charles II took place in this county. General Lambert, who had escaped from confinement in the Tower of London, appeared at Daventry with a few troops of horse, but, being opposed by a force of the Parliamentarians, he was taken by his own men, was captured and re-committed to the Tower.

(Baker's History of Northamptonshire: Bridge's History of Northamptonshire: Beauties of England and Wales: English and Welsh History: History of England and Wales: Greenough's Geographical Map of England; Lewis's Topographical Dictionary; Rickman's Civic Architecture; Britton's Architectural Antiquities; Reynolds's Peer Britannicum; Palgrave's Rise and Progress of the English Commonwealth; Shrewsbury's Anglo-Saxons and History of England in the Middle Ages; Parliamentary Papers.)

STATISTICS.

Population.—Northamptonshire is chiefly an agricultural county. In 1831 it ranked the twelfth on the list of agricultural counties: its place in this respect has fluctuated since 1811, when it was the tenth on this list; and in 1821 it was the eleventh. Of 43,793 males twenty years of age or over, 37,112 (or 88%) were engaged in agriculture; of 28,102 females, 21,897 (or 78%) were employed in agricultural pursuits; out of this latter number 17,775 were labourers. Of the 582 employed in manufactures or in making manufacturing machinery, about 200 were engaged at Kettering in making shoes and weaving silk-shape; about 60 in weaving black, at Rothwell, Chatterto, and Eydon; there were 130 at Middleton-Cheney occupied as frame-work knitters, and about 70 more thus employed in other parts; 80 men a making cars, about 6 miles north-west of Northampton. Wallingborou, Irthingborough, and various other places, more than 60 men occupied as shoe-makers, making shoes not consumed in the respective places, but these, for the sake of uniformity, were placed under the head of men engaged in trades and handicrafts, though more strictly speaking they are manufacturers.

The population of Northamptonshire, in each of the following decennial periods was—

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>63,417</td>
<td>68,340</td>
<td>131,757</td>
</tr>
<tr>
<td>1811</td>
<td>68,279</td>
<td>73,674</td>
<td>141,953</td>
</tr>
<tr>
<td>1821</td>
<td>79,575</td>
<td>82,908</td>
<td>162,483</td>
</tr>
<tr>
<td>1831</td>
<td>87,949</td>
<td>91,387</td>
<td>179,336</td>
</tr>
</tbody>
</table>

showing an increase, between the first and last periods, of 47,779, or more than 36 per cent, on the whole population being 21 per cent, below the whole rate of increase throughout England.

The following table exhibits a summary of the population of every hundred, as taken in 1831:
### County Expenses, Crimes, &c.

The sums expended for the relief of the poor at the four dates of

<table>
<thead>
<tr>
<th>Year</th>
<th>£ s. d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>94,607</td>
</tr>
<tr>
<td>1821</td>
<td>19,917</td>
</tr>
<tr>
<td>1831</td>
<td>150,816</td>
</tr>
</tbody>
</table>

The sum expended for the same purpose for the year ending March, 1838, was 77,163 11s.; and assuming that the population had increased from 1831 to 1838 at the same rate of progress as in the ten preceding years, the above sum gives an average of 8s. 0d. 4d. for each inhabitant. These averages are above those for the whole of England and Wales.

The sum raised in Northamptonshire for poor-rate, court-rate, and other local purposes, in the year ending 25th March, 1833, was 169,614 8d., and was levied upon the various descriptions of property as under:

<table>
<thead>
<tr>
<th>Description of Property</th>
<th>£ s. d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>150,467 3s.</td>
</tr>
<tr>
<td>Dwelling-houses</td>
<td>15,181 10d.</td>
</tr>
<tr>
<td>Mills, factories, &amp;c.</td>
<td>1,756 13d.</td>
</tr>
<tr>
<td>Memorials, profits, &amp;c.</td>
<td>2,209 2s.</td>
</tr>
</tbody>
</table>

**Total** 169,614 8d.

The amount expended was:

<table>
<thead>
<tr>
<th>Description of Property</th>
<th>£ s. d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the relief of the poor</td>
<td>148,942 4d.</td>
</tr>
<tr>
<td>In suits of law, removal of paupers, &amp;c.</td>
<td>3,742 18d.</td>
</tr>
<tr>
<td>For other purposes</td>
<td>19,637 5s.</td>
</tr>
</tbody>
</table>

**Total money expended** 170,822 7d.

In the returns made up in subsequent years the descriptions of property assessed are not specified. In the years 1834, 1835, 1836, 1837, and 1838, there were raised 166,712 12s. 19d., 144,112 4s., 112,231 12s. (not given for 1837), and 89,419 4d. respectively; and the expenditure of each year was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>£ s. d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1834</td>
<td>183,358</td>
</tr>
<tr>
<td>1835</td>
<td>183,363</td>
</tr>
<tr>
<td>1836</td>
<td>183,287</td>
</tr>
<tr>
<td>1837</td>
<td>183,248</td>
</tr>
<tr>
<td>1838</td>
<td>183,308</td>
</tr>
</tbody>
</table>

For the relief of the poor:

<table>
<thead>
<tr>
<th>Year</th>
<th>£ s. d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1834</td>
<td>118,940 9d.</td>
</tr>
<tr>
<td>1835</td>
<td>91,901 9d.</td>
</tr>
<tr>
<td>1836</td>
<td>74,972 7d.</td>
</tr>
<tr>
<td>1837</td>
<td>77,183 6d.</td>
</tr>
<tr>
<td>1838</td>
<td>111,584 8d.</td>
</tr>
</tbody>
</table>

### Occupations

See the table for details.

### Persons

See the table for details.

The saving effected in the sum expended in 1838, as compared with that expended in 1834, was therefore 72,815 12s., or not quite 44 per cent, and the sum expended for the relief of the poor in 1838 was less than that in 1834 by 63,016 9d., or more than 45 per cent.

The number of turnpike trusts in Northamptonshire, as ascertained in 1836, under the acts 3 and 4 William IV., c. 80, were 27; the number of miles of road under their charge was 358. The annual income arising from tolls and parish composition in lieu of statute duty, in 1835, was 37,964 18s., and the annual expenditure in the same year was as follows:

<table>
<thead>
<tr>
<th>Description of Property</th>
<th>£ s. d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual labour</td>
<td>2,671 2d.</td>
</tr>
<tr>
<td>Team labour, and carriage of materials</td>
<td>3,038 9d.</td>
</tr>
<tr>
<td>Materials for surface repairs</td>
<td>3,293 5d.</td>
</tr>
<tr>
<td>Land purchased</td>
<td>37 6d.</td>
</tr>
<tr>
<td>Damages done in pursuing materials</td>
<td>3,350 12d.</td>
</tr>
<tr>
<td>Tradesmen's bills</td>
<td>1,308 19d.</td>
</tr>
<tr>
<td>Salaries of treasurer, clerk, and surveyor</td>
<td>2,302 16d.</td>
</tr>
<tr>
<td>Law charges</td>
<td>641 16d.</td>
</tr>
<tr>
<td>Interest of debt</td>
<td>769 19d.</td>
</tr>
<tr>
<td>Improvements</td>
<td>2,950 4d.</td>
</tr>
<tr>
<td>Debts paid off</td>
<td>1,006 0d.</td>
</tr>
<tr>
<td>Estimated value of statute duty performed</td>
<td>2,446 2d.</td>
</tr>
</tbody>
</table>

**Total expenditure** 35,701 16d.

The county expenditure in 1834, exclusive of that for the relief of the poor, was 68,011 9d., disbursed as follows:

- **Bridges, building, repairs, &c.** £730 10d.
- **Gaols, houses of correction, &c., and maintaining prisoners, &c.** 2,181 4d.
- **Shire halls, and courts of justice, building, repairing, &c.** 2,181 4d.
- **Prosecutions** 1,684 9d.
- **Clerk of the peace** 245 12d.
- **Conveyance of prisoners before trial** 470 12d.
- **Conveyance of convicts** 293 2d.
- **Vagrants, apprehending and conveying** 315 18d.
- **Miscellaneous** 935 10d.

**Total expenditure** 6,801 6d.
The number of persons charged with criminal offences in the three septennial periods ending with 1820, 1827, and 1834, were 765, 925, and 2,921 respectively, making an average of 109 annually in the first period, of 132 in the second period, and of 176 in the third period. The number of persons tried at quarter-sessions in each of the years 1831, 1832, and 1833, in respect to which any costs were paid out of the county rates, were 49, 54, and 51 respectively. Among the persons charged with offences there were committed for:

1831. 1832. 1833.

Felons. 44 48 48
Misdemeanors. 6 6 3

The total number of committals in each of the same years was 77, 72, and 53 respectively.

The number convicted was 58 55 39
Acquitted. 13 14 7
Discharged by proclamation 6 3 7

There were 268 persons charged in 1838 with crimes at the assizes and sessions in Northamptonshire. Of these 38 were charged with offences against the person, 24 of which were common assaults; 12 were charged with offences against property committed with violence; 191 with offences against property committed without violence; only 2 were charged with malicious offences; 1 for uttering counterfeit coin; and 24 for various misdemeanors.

Of the whole number committed, 188 were convicted, 56 were acquitted, 3 were prosecuted, and no bill was found against 30. Of those convicted, 2 were sentenced to death, but their sentence was commuted into transportation for life; 31 were transported for various periods; 2 were sentenced to two years; 28 to one year; and 115 to six months and under; 10 were fined, and 1 was found insane. Of the whole number of offenders, 234 were males and 34 females; 104 could neither read nor write imperfectly; 15 could read and write imperfectly; 15 could read and write well; and one had received superior instruction.

The number of persons registered in 1837 to vote for county members was 8457. Of these, 5610 were freeholders, 2147 leaseholders, 2201 occupying tenants, and 121 annuitants: being 1 in 21 of the whole population, and 1 in 5 of the male population twenty years of age and upwards, as taken in 1831.

Northamptonshire contains three savings' banks: the number of depositors and amount of deposits on the 20th of November, in each of the following years, were as under:

1832. 1833. 1834. 1835.

Number of depositors. 4093 4031 4081 4106.
Amount of deposits. 4155,397 437,879 419,109 416,271.

The various sums in the savings' banks in 1836, 1837, and 1838, were distributed as under:

1836. 1837. 1838.


Education.—The following summary is taken from the Parliamentary Returns on Education made in the session of 1835.

Schools. Scholars. Total.

Infant schools. 132
Number of children at such schools; ages from 2 to 7 years;
Males. 636
Females. 613
Sex not specified. 933

Daily schools.
Number of children at such schools; ages from 4 to 14 years;
Males. 8,471
Females. 5,186
Sex not specified. 5,244

Schools. 676

Total of children under daily instruction. 14,175

Sunday-schools. 406
Number of children at such schools; ages from 4 to 15 years:
Males. 11,663
Females. 11,668
Sex not specified. 5,921

Assuming that the population between the ages of 2 and 15 years has increased in the same proportion as the whole of the population since 1821, and that the whole population has increased in the same ratio since 1831 as in the two years preceding that time, the approximate number of children between the ages of 2 and 15 years thus found as residing in Northamptonshire in 1833 was about 66,287.

Inasmuch as Sunday-schools, containing 2411 children, which are both daily and Sunday schools, are returned in various places, and duplicate entry has been made to be thus far created. Moreover, for this cause, which prevents accuracy, we may perhaps fairly estimate that about two-thirds of the children between the ages of 2 and 15 years are under instruction in this county.

Maintenance of Schools.

Schools. Scholars. Total.

Infant Schools. 7 81 9 523 112 1,253 Daily Schools. 11 3,620 86 3,051 345 7,256 32 1,117 Sunday Schools. 39 2,167 356 14,249 Total. 1,174 5,978 429 27,783 457 9,689 68 4,817

The schools established by Dissenters, included in the above statement, are

Infant schools. 37 containing 371 Daily schools. 13 31 Sunday schools. 110

The schools established since 1818 are

Infant and other daily schools. 279 containing 279 Sunday schools. 212

Twenty-four boarding-schools are included in the number of daily-schools 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, such exclusion being disapproved in almost every instance, long time an exceedingly popular print. For the whole number of Wesleyan Methodists and Roman Catholics.

Lending-libraries of books are attached to 23 schools in this county.

NORTHCOTE, JAMES, an English artist and writer on art, was born in 1746, at Plymouth, where his father was a watchmaker. Having been introduced to Sir Josiah Reynolds through Dr. J. Mudge, he went to London at the age of twenty-five to study painting under him, and was five years only his pupil but his inquest. Therefore was no small advantage to him, as it extended to refine his manners, but brought him into contact with the best society of the day. On quitting Reynolds at first set up as a portrait-painter, and would no doubt have become eminent in that branch of the art, as he possessed much insight and power of describing individual character. But his ambition prompted him to aspire to something higher than taking likenesses. He accordingly went out for Italy, where he spent ten years and made a member of the academies of Florence and Rome. On his return he was encouraged by Boydell, who published many engravings after subjects painted by him, and among others that called the Village Doctoress, which was followed by exceedingly popular print. For the whole number of Wesleyan Methodists and Roman Catholics.
besides some other subjects. Yet although he displayed considerable skill in composition and colouring, together with vigour of expression, his ability in art was by no means equal to his enthusiasm and his application. For nearly half a century he existed almost entirely in his painting-room in Argyle Street, and would have been content, as he himself said, to live on so for ever in what was to him all-sufficient content. He fished the lake, and in his life he never voted, and independent both in spirit and circumstances—the latter chiefly owing to his prudence and frugality. He was apt to be somewhat cynical, though really kind-hearted. Hazlitt’s Conversations’ with him after his retirement, recorded his great love of the sea.

Memoirs of Sir Joshua Reynolds, with an Analysis of his Discourses, 2 Vols., 1813. His name is inscribed, extends from the east of the junction of the Tweed with the Tyne southward to the bank of the Tyne. In the northern part they bear the name of the Divot Hills; in the centre they form the highlands of Eglington Common, Rothbury Forest, the Harwood Moor to the north, and Harwood Moor; more to the south are Otter Caps and Crag. Black Heddon, near the Divot Hills, is 646 feet high. Branches from these hills extend eastward toward the sea; Rufflaw, in one of these branches near Morpeth, 139 feet high, and Hartside, one of the southernmost, 225 feet high. The hills south of the Coquet form part of the extensive moorlands which occupy a third part of the county, and have an average elevation of from 500 to 1000 feet above the level of the sea.

South of the Tyne is a group of hills separating the valleys of the Tyne and the Wear. The Wolf Hills, part of this group, approach the right or east bank of the South Tyne. On the opposite side of the valley of that river are the highlands of Germain Fells, which are partly in this county and partly in Cumberland.

The coast is low. There are no cliffs except very low ones throughout its whole range. From the mouth of the Tweed at Berwick it runs south-east to Sunderland Point. In this direction, the coast is nearly level, and is built up by many headlands and bays; Beadnell Point, the headland of Dunstanborough Castle, Boulmer Bay, Alnmouth Bay, Hawksley Point, south of which is Druridge Bay, Newbiggin Point, and Beaton Point. These islands and the southernmost two islands, Holy Island and the Farne Islands are noticed elsewhere. [Durham.]

From Sunderland Point the coast runs south by east to the mouth of the River Wear, which is marked by many headlands and bays, and is built up by many headlands and bays; Beadnell Point, the headland of Dunstanborough Castle, Boulmer Bay, Alnmouth Bay, Hawksley Point, south of which is Druridge Bay, Newbiggin Point, and Beaton Point. These islands and the southernmost two islands, Holy Island and the Farne Islands are noticed elsewhere. [Durham.]

The south-eastern part of the county, bounded by a line drawn from Warkworth, at the mouth of the Coquet, by the head of the river Blyth, to the Tyne, and from thence southward, is included in the great coal-field of the counties of Northumberland and Durham. [Coal-Fields.] This coal-field is skirted on the north-west by a belt of land occupied by the millstone-grit. The thickness of this formation is probably more than 3000 feet.

The prevailing rock of the series is shale, known by the provincial name of plate, with which occur various beds of sandstone, differing in hardness and texture, and, according to these differences, distinguished as fine or coarse marl, millstone grit, and sandstones. Beyond the millstone-grit district is a belt of land, still narrower than the foregoing, occupied by the carboniferous or mountain limestone. This is marked in Mr. Greenough’s Map as skirted by the millstone-grit, from the sea at Alnmouth to the southern border of the county, where it expands over a greater extent, occupying the valley of the Tyne and the country south of it from the border of Cumberland to below Henshaw. Near by the rest of the county is occupied by a series of formations comprising sandstones of various kinds; some resembling the sandstone of the millstone-grit series, limestone, slate, clay, shale, and coal.

The relative position of these beds is not ascertained. The coal worked in this formation is slate coal, and is considered inferior in quality to that of the Dunstanborough and Durham coalfields.

Conybeare and Phillips refer these beds to the millstone-grit series. Trap rocks occur in connection with both coal forms, one, either as overlying masses, resting unconnected on the other strata; or as peculiarly irregularly intersecting the strata; or as beds, conformably interstratified and regularly alternating with the other strata. A small district along the Tweed is occupied by the new red-sandstone.

The principal mountain product of this coal-field is pit-coal, of which the chief part raised is sent coastwise to London and to various parts of the southern and eastern counties which do not produce coal. [Coal-Fields; Coal Trade.] The principal pits in the great coal-field are in the neighbourhood of the Tyne.
There are many pits in the millstone-grit and carboniferous limestone districts, and in the inferior coal formation which crops out from beneath them and overspreads so large a portion of the county. Some gypsum is obtained in the Lambton district, near the River; and there are lead-mines in the carboniferous limestone at Allendale, near the border of Durham [ALLENDALK], and in other places. The ores of zinc abound in most of the veins producing lead. There is abundance of ironstone in the strata which occupy the Lime-scale hills. Large quantities of stone for many purposes is quarried in the principal coalfield.

The rivers of Northumberland rise for the most part in the eastern slope of the hills of the county, and flow south into the county to the German Ocean. The Tweed rises to the west of this range, and branches chiefly to Scotland. For a short distance however, near Coldstream, it skirts the border of Northumberland and of that detached portion of Durham which lies west of Berwick. The Bow flows eastward up to Newcastle, but vessels of forty or fifty tons get up to New Waterford only, six miles above Berwick.

The Till rises in the eastern slope of the border range, near the Hartsike Hills, and, under the name of the Bremin, flows south to the sea near Alnwick. The Coquet rises in the border range, and flowing first south-east, then west, and finally north-east, it turns into the Tweed, the north branch of the Till, and flows into the sea at Alnemouth. The Coquet is navigable for a short distance, the former up to Alnwick. There is a small branch which flows into the mouth of these rivers, and the Aln abounds in trout.

The Wensbeck or Wansbeck rises in the hills which run through the centre of the county, and flows east past Morpeth, where it becomes navigable, into the German Ocean. Its whole length is 54 miles, the navigable part above Bellingham 40 miles. The Blyth rises in the same range of hills as the Wensbeck, and has a course of above 20 miles nearly parallel to that river, more to the southward. It is navigable a short distance from the mouth. The Pont is a small stream, flowing into the Blyth. The parish of Bedlington, or, 'Bedlingtonshire,' between the mouths of the Wensbeck and the Blyth, belongs to the county of Durham. The Seaton Burn is a short stream, 11 or 12 miles long, to the south of the Blyth, with which it communicates near its source. It flows into the sea at Seaton Sluice, or Hartley new harbour.

The North Tyne rises from several springs, some of which are just within the Scottish border, some in Northumberland, and the rest on the border range. The north stream under the name of the Kessinglister, 10 miles, turns eastward and flows 14 miles to just below Bellingham, where it receives the river Reed from the border of the county, 23 miles long; from this point the stream flows southwest 14 miles to the junction of the South Tyne, just above Hexham. The South Tyne rises amid the hills south of Alston Moor in Cumberland, and after flowing 17 miles northward to Haltwhistle, turns eastward and flows 16 miles to its junction with the North Tyne. It receives the Allen and the Wansbeck, 22 miles long, which, just a tolerably direct eastward course of 30 miles, past Newcastle into the sea between North and South Shields. Its whole length from the head of the North Tyne is about 70 miles. Its navigable part is 60 miles, up to Newcastle, and for river craft a few miles higher. The navigation on this river was formerly celebrated, but is now nearly if not quite destroyed. The spring-tides rise about 18 feet at the mouth of the river and about 1½ feet at Newcastle.

The grandeur of the Tyne is very important, and a considerable number of boxes of that fish packed in ice are sent from that river to the London market, beside what is pickled or dried. There is a fishery for salmon-trout and grilse, or small salmon, at Warkworth on the Coquet. The Coquet is noted of its agriculture; the vale of Tyne exhibits great variety of scenery; above Newcastle it is rich and beautiful.

There are no canals in Northumberland, but there are many railroads. The most important is the Newcastle and Carlisle Railroad. It follows the valley of the Tyne and South Tyne partly on the north, partly on the west, and leaves the river, and passes by Hexham and Haltwhistle. Its whole length is about 66 miles, the greatest part in the county. The Act was obtained in 1829 and the railway was opened in June, 1838. The number of passengers who were conveyed by this railroad from Newcastle to North Shields, above seven miles long, was opened in 1839. It is 64 miles long, and passes under the Shields road by a tunnel 70 yards long. The number of passengers by this railroad from Newcastle to Carlisle has increased from 1500 passengers per annum in 1839, to 18,000 in 1843. The Edinburgh mail-coach road enters the county at Newcastle, and runs north to Berwick, Alnwick, and Belford, to Berwick-upon-Tweed. Another road to Edinburgh branches off from this beyond Morpeth, and runs by Wooler to Coldstream. A third road to Edinburgh runs from Newcastle by the valley of the Reed to Jedburgh in Scotland.

Agriculture.—The position of this county, in the north-eastern extremity of England and along the coast of the German Ocean for upwards of sixty miles, causes the climate to be peculiarly cold, but the agricultural products are sufficient to provide for its requirements. The county is well adapted to the culture of wheat, barley, oats, red-sandstone, potatoes, and many other crops, and there are some excellent natural meadows and pastures.

The banks of the Tyne and the Coquet, and along the Aln from Alnwick to the sea, the soil is chiefly a light loamy sand, or dry loam, and produces the greatest degree in the vale of the Beaminth, Till, and Beaumont. In the middle and south-eastern parts of the county the soil is a moist loam on a cold impervious clay bottom, which is of inferior value until it has been improved by manure. The sandy soils of the northern part produce inferior pasture unfit for sheep, which are subject to the rot when turned out upon it, but it is better adapted for young cattle, which may be reared but not fattened on it. On the hills, which are in a state of nature, there is a mixture of low pasturage, stony, and gravel patches; and some good dry green pasture well adapted for sheep feed.

The county of Northumberland has been one of the foremost of the English counties in adopting the improved system of agriculture, the chief feature of which is the cultivation of turnips. The turnip beds have been introduced into many farms, and the cultivation of turnips is now extensively carried on in the county. Turnips accordingly occupy a large proportion of every farm in the soil of which admits of this cultivation. So great has been the advantage derived from this change from the old triennial system, that many fields now yield a heavy crop of turnips with the least possible expense. Our agriculture would be considered as totally unfit for its cultivation. Thas has arisen from the early adoption of the culture in rows on elevated ridges, which has received the general appellation of the whole county, and which we shall therefore describe with some minuteness. The ground having been prepared by as many ploughings and harrowings as may be thought requisite to pulverize and destroy the weeds, and laid quite flat, an experienced hand hies them in the excellence of the work. The turning lays the next furrow slice upon the first, thus completing what is usually called a bout. The usual width of
The furrow being nine inches, the first ridge and furrow take up 18 inches; the next furrow slice being laid over the first, the whole work takes a width of 27 inches. The whole field is thus laid into narrow ridges, which, from the soil being light and crumbly, gives the section of the surface a waved appearance, such as is represented in the annexed cut, the depressions are about six inches below the former surface and the ridges as much above. This at once doubles the depth of the cultivated soil in the ridges. The manure is now brought on the land in small one-horse carts, the wheels of which are about 34 inches apart, so that the horse walks in one of the ridges, and the wheels move in the two adjoining. The manure, which is chiefly common farm-yard dung, is not too much decomposed, especially if the soil is inclined to clay, is laid in small heaps over the cart by a dung-hook, or, which is better, by a boy standing in the cart, who forms it out more regularly as the horse goes slowly on. It is then laid equally in the furrows by women and boys. The quantity thus laid on, depends on the supply of the yard concerned, the weather, and the turnip-yield, but for the whole, is intended to be used on this crop. In general, not less than 15 or 20 single-horse loads per acre are thought necessary to produce a good crop. Twice that quantity is often put on. This dung is evenly distributed and the surface of the ridge is entirely flat, so that the ridges are now directly over the dung, which is left on the ground. The furrow is generally cut deeper than this is exactly similar to what it was after the first ploughing. A roller is now drawn over the ridges, to flatten them at top, in order that they may better receive the seed, which is drilled exactly on the middle of the ridge by a machine attached to the cart. This is a considerably cheaper process than that of the Norfolk and Suffolk systems, and it is usually sufficiently large to roll two ridges at once, and, in that case, two drilling-machines, each guided by a man, are fixed to it, and one horse, walking in the middle furrow, draws the whole apparatus forward. Thus, two men and a horse, with a boy to lead the latter, can drill four or five acres in one summer’s day. The drill barrow has a very slight coulter, hollowed out at the back part to receive the tin tube through which the seed is delivered. The simplest coulter merely puts out a band of earth, the tines of which are long as the first-mentioned wheel goes on the ground the seed is delivered, but as soon as it is raised, so that the drill proceeds on the other wheel alone, no seed falls through, because the axis no longer turns. Thus none is lost in turning at the ends of the ridges. In very light soils another slight rolling is necessary to press in the seed; but in stiffer loams a small chain or piece of iron dragged after the coulter is sufficient to cover the seed, without rolling. By this method the seed has not only a greater depth of root, but there is no fermentation of the dung immediately under it as acts a hot-bed and soon brings it up; by which means it generally is so rapidly in the rough leaf, that it seldom suffers from the deprivations of the fly. Experience shows that a moist climate the ridge system produces much more certain and heavier crops than could be expected in general from the most careful broad-cast culture. As soon as the turnip has four leaves out of the ground, the rows may be thinned by the hand or by the hoe, and the whole mass laid by in the ridge left to ten inches apart. The next process is stirring the ground between the rows with a light one-horse plough. This plough takes a small shallow furrow to the left of the row, within three or four inches of the young plants, and lays it in the middle of the interval between the ridges. When this has been done, one or both sides all over the field, there will be small ridges formed between the principal ridges on which the turnips grow. All weeds are thus buried, except between the plants in the rows, where they are taken out by the hand or hoe. Some time afterwards a narrow cultivator, like harrows with crooked tines, which are called cat’s claws from their shape, is drawn over the land, and clear it from all remaining weeds; this is repeated more than once, if it should be thought necessary. Before the autumn rains set in, the turnips have too wide spreading tops, a plough with a double mould-board is drawn in the middle of the intervals between the ridges, and the ploughed overridges soil on each side against the ridge on which the turnips grow; not to cover the roots and protect them from frost, as some think, but to supply fresh mellow earth for the extending fibres of the root to strike into. In heavy wet loams it may be necessary, in order to control the least furrow between the rows, to let off any surface water, in the latter end of the season with a double mould-board plough, and dig out deeper water-furrows with the spade across the ridges, where the manure requires, by the nature of the surface. But this is not often necessary in common turnip soils. By following the above system, Swedish turnips and even common white turnips may be raised with success on the heaviest soils; and if taken up early, and stored for winter, it may leave the land in as good a state for wheat, with one or two ploughings, as if it had been harrowed. The carts which take off the turnips will not hurt the land, for the horse walks in a deep furrow, and the wheels move in similar ones, and thus the mellow earth is not trod upon. The furrows in which the dung has been deposited, may be spread evenly for the next crop, the ridges are often made in a diagonal line across the usual line of ploughing. When the turnips are off, one plought bed level each of the ridges, heavy harrows level the whole, it can be ploughed under as ordinary stitches for the sowing of the next crop. Sometimes wheat is sown immediately, but more frequently barley with clover-seed in spring. In the latter case the Swedish turnips may be mown on the ground all winter, and, taken up or fed early in spring.

Though you may traverse the whole of Northumberland without meeting with a single field of turnips sown broad-cast, the drilling of other crops is by so means so common. Whether frühe, and that the horse is heavy, half the turnips are drawn for oxen and cows, and the other half fed off; or, which is a late improvement, they are cut into slices or strips by a machine, and given to the sheep with cut clover. If the soil is deep the turnips are cut down into two, or, at worst, into three times, after which the turnips were drawn. In this way the turnips go much farther; and lambs and old ewes will thrive and fatten on them, which they could not have done in the old way for want of oats to best them. After one, or even two, broad clover, with a small patch of annual rye-grass, mows once for hay and ploughed up for wheat. The next course is the same, with the variation of some substitute for the broad clover, which should not be sown on the same land oftener than once in eight years to ensure good crops. Part
of the land may be in peas or turnips to cut green, and part in grass-seeds without clover, according to the judgment of the farmer. There are some very heavy and wet soils in the county, which will not readily bear turnips, and where the sheep cannot be foddered. The land being often covered with the turf, the turnips carted off without injuring the land. There a fallow is unavoidable at least once in six or seven years. In other respects they are cultivated in a similar manner with the good loams. The practice of thorough draining, which is spreading rapidly, will probably in the long run replace and substitute turnips in their place, even in the most extensive soils, which will in time be converted into rich loams by the effect of cultivation, loaming, manuring, &c., as may be seen in many old gardens, of which the natural soil was once a native soil.

Potatoes are raised to a considerable amount on some very good sands and loams. They require land in good heart; for whatever may have been said or written to the contrary, they very much exhaust the soil, and should be repeated oftener than once in ten or twelve years on the same spot. The best land to plant potatoes in for human food is that which is broken up from two or three years' old grass. For cattle they may occupy a portion of the turnip-field, and be cultivated in the same way, with horse cartage, that the sets, or cut potatoes, are put immediately on the manure in the furrow, and covered over with four or five inches of earth by the plough. As they rise out of the ground they are moulded up by the plough; and this is repeated, and thus made on the mould-boards, as often and as deep as the soil will allow. Thus 400 bushels, or twenty tons, of the large-cottage potatoes may be raised on an acre of good land: they are good for every kind of stock kept, and the hay they make, or steamed or unsteamed, is excellent. Although the ultimate profit in this way is much inferior to that of a smaller crop of more edible potatoes, sold in the market, the manure produced annually makes up for the difference, unless potatoes sell at a high price, as is the case in some years.

The instruments of tillage are mostly of improved make. The ploughs are generally iron swing-ploughs, on the principle of the old Rotherham plough, which was copied from the Belgian plough, and improved by Small and others. The harrows, rollers, scythes, &c., are as good in other countries. The turnip-drill has been described, and there are various improvements daily made in the construction. The best sows two rows at once, and has a roller before and one behind, thus combining all the necessary operations connected with the ploughing of the ridges. Single cartage is more common than any other, and used for all purposes, especially the conveyance of lime and other manures from a distance. Bone-ground to a moderate size are now extensively used for turnips on clayey, sandy, gravelly soils; and they have greatly improved all the crops, by securing that of the turnips, at a much less expense of farm-yard dung. Threshing-machines, moved by water, wind, or horses, are thought essential on the larger Northumbrian farms; and they are used in the country. The labourers are industrious and honest: they are mostly paid partly in grain, by the keep of a cow, and a cottage rent-free, with other advantages. (Usurikwanas.) The unmarried servants are boarded on the farm in Scotland.

There are not many meadows, properly so called, in Northumberland, and few are artificially irrigated. Some rich upland pastures are mown annually, or every two or three years, and off the remainder of the time. Some are occasionally invigorated with manure, chiefly composts of earth, lime, and dung, well mixed and incorporated, which is put on in winter, when farm-work is slack, or, which is better, immediately after the hay is taken off, which it is preferred in by the farmers. The hay produced from clover and artificial grasses, of which there is a considerable quantity on all well-managed farms, furnishes the great supply of winter fodder for horses, and is a crop of great value.

The cattle in Northumberland are generally of good breeds, mostly short-horned. Those bought to fatten are chiefly Scotch. In noticing the cattle of this county we cannot pass over the wild breed, in the earl of Tankerville's parks; they are said never having been made useful for farming purposes: nor does it appear that they have been used with any advantage for crossing with domesticated breeds. They are of a light cream colour, with black muzzles. Their flesh is said to be good and succulent, when they are killed in condition, which must be done by shooting them like deer. The cows kept for the dairy are almost invariably of the short-horn breed; few remain, as they have ceased to be reared in the county, some of which travel southward and supply the large dairies of the London milkmen. The calves are reared on milk at first, gradually mixed with water and meal, till they can live on grass alone and run pasture. They are reared by the farmer's wife, who is not often hired, and are often sold in calf and in good condition the ensuing autumn. If they are kept over the second winter, they have the same food as in the first, with the addition of a little hay. They are then sold for winter cattle, or sold with their young calf soon after calving, which is generally in April or May. Great attention is paid by some breeders to have a good bull; and very high prices are given for the use of one of a good breed and with good points for one season. The breedists have a large commercial business, and requires much experience and judgment.

Excellent farm-horses are bred in Northumberland. They are active, with clean legs, and are very muscular and hardy. Four fat horses in a plough or team, such as are near to neat, would be a curiosity in the northern counties. They like fat bullocks, but prefer hard wiry miners of horses. It is not often that a plough is seen with only horses yoked to it, this only for trench or sub-soil ploughing, a practice which is beginning to grow greatly on this side. The horse is now the principal instrument of agriculture, and the horse in a single cart will go to a distance of 18 or 20 miles for lime or coal, and return in the 24 hours; and this will do four times, and even oftener, every week. It is wonderful to consider how necessary fat about them.

The sheep are chiefly of the Cheviot breed, a useful hardy sheep with a small fleece of moderate wool. A cross between a Cheviot ewe and a long-woolled ram is said to produce a useful breed improved in the carcass and in the bulk if not the fineness of the fleece. On high improved farms the Leicesters and Southdowns are kept, and every other may be found: but as many of the pastures are wet, and apt to cause rot in the sheep at particular seasons, most farmers buy them in to eat their turnips, and sell them off when fit for the market, before there is any fear of the country being tainted.

The Cheviot sheep are described as follows. They have a fine open countenance with lively prominent eyes, a long body with a want of breadth at the chine and breast. Their fleece is fine, and of reasonable length, and the carcass will weigh from six to eight stones of blts. and stone. The fleece is from 2lbs. to 3lbs. weight, of a mixed wool, which might probably be much improved by care in selecting the ewes and rams kept for breeding, as was the case with the practice against the cattle. Some rams have already been taken to improve the breed and with good results. The principal farms in Northumberland are let on lease for 21 years to highly respectable tenants with sufficient capital. No more need be said as account for a high state of this division.

There are no very extensive old woods in the county, but many thriving plantations; there is a constant demand for small timber for the use of the coal-mines, which makes a market for such woods. Trees are kept on the larger farms, and sold by auction; the same may be done on any farm which has wood and a market for it. In the county of Northumberland there are a considerable number of pocket sales made every year at auctions, which are well attended. The market for timber is good, and there is a demand for it in all parts of the country. The timber for building, &c., is of the best quality, and is sold at a good price. The market for timber is good, and there is a demand for it in all parts of the country. The market for timber is good, and there is a demand for it in all parts of the county.
Thursday, sheep; Friday, horses; Newcastle, August 12 and October 29, nine days each, horned cattle, sheep, hogs; North Shields, last Friday in April, first Friday in November, cattle; Ovingham, April 26, swine, fat land and plum slate; Rothbury, Friday in Easter week, Whit-Monday, October 29.

2. All Saints, November 1, horned cattle; St. Ninian near Fenton, July 14, hogs; September 27, black cattle and sheep; Warkworth near Alnwick, Old Michaelmas, if a Thursday; if not Thursday before, November 22, horned cattle; Wheel-walk near Wooler, Whit-Tuesday, black cattle, sheep, hogs; Tynemouth, Thursday, April 24, black cattle, horses; Wooler, May 4, October 17, cattle, horses, sheep.

**Divisions, Towns, &c.**—Northumberland is divided into six wards, as follows:

<table>
<thead>
<tr>
<th>Town</th>
<th>Situation.</th>
<th>Acres</th>
<th>Pop. in 1831</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bamborough</td>
<td>N.E.</td>
<td>69,650</td>
<td>10,842</td>
</tr>
<tr>
<td>Castle</td>
<td>S.E.</td>
<td>103,680</td>
<td>71,533</td>
</tr>
<tr>
<td>Coquetdale</td>
<td>Central</td>
<td>269,550</td>
<td>21,121</td>
</tr>
<tr>
<td>Glenedale</td>
<td>S.W.</td>
<td>107,200</td>
<td>12,009</td>
</tr>
<tr>
<td>Morpeth</td>
<td>Central</td>
<td>93,353</td>
<td>12,311</td>
</tr>
<tr>
<td>Tindale, or Tynedale</td>
<td>S.W.</td>
<td>514,660</td>
<td>42,415</td>
</tr>
<tr>
<td>Newcastle, town and county of the town</td>
<td>2,000</td>
<td>42,760</td>
<td></td>
</tr>
<tr>
<td>Berwick-upon-Tweed</td>
<td></td>
<td>5,120</td>
<td>8,290</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,165,430</td>
<td>222,912</td>
</tr>
</tbody>
</table>

It contains the assize town of Newcastle, the parliamentary and municipal borough of Morpeth, and the parliamentary borough of Tynemouth and North Shields, and the market towns of Alnwick, Belford, Bamborough, Hexham, Birkwhistle, Hexham, Rothbury, and Wooler; and may be added, as places of some importance, though without markets, Alnham, Bamborough, Blyth, Hartley, Seaton, and Warkworth. Of these some are noticed in separate articles, and others in the general view of the county.

Belford is in the northern division of Bamborough ward, on the Edinburgh mail-road, 484 miles from Newcastle, and 322 from London. The entire parish comprehends 9380 acres (with a population, in 1831, of 2930 inhabitants), and extends into Isalandsire, a part of Durham; the township of Belford contained, in 1831, a population of 1564, about one-fourth of the town. The town stands on a gradual slope about two miles from the sea. It consists of two principal streets; the houses are in general neat and well built. The church, or chapel, is an irregular building capable of containing 600 or 700 persons; there are 14 Sunday-schools, and a reading-room, with a subscription box.

The living a perpetual curacy, of the clear yearly value of £175, with a glebe-house. There were, in 1833, in the township of Belford, five day-schools, with 181 children; three boarding-schools, with 26 children; and two Sunday-schools, with from 99 to 140 children, and three Sunday-schools, with 102 children, and one Sunday-school, with 42 children.

Bamborough is in north-west division of Tindale ward, 16 miles from the west of Hexham, and 4 miles from Bamborough. The parish (one of those formed by the division of Simonburn parish, a.d. 1811) comprehends the township of Bellingham, and the 'quarters' of East Charlton, West Charlton, Leemailing, the Nook, and Tarretburn, with an aggregate area of 1440 acres, and a population of 1831, 350, of whom 464 were in the town of Bellingham. The town is pleasantly situated on a declivity on the left bank of the North Tyne, and comprehended, in 1831, only 82 inhabited houses. The chapel is a small antient building with a finely groined roof, and in the cupolas is an inscription, 1460.

Haltwhistle, is in the west division of Tindale ward, 285 miles from London. The parish contains 32,930 acres, and is divided into thirteen townships. The population of the whole parish, in 1831, was 4982; that of Haltwhistle township, 1018. The town is on an eminence at the northern bank of the South Tyne, and consists of one principal street, running east and west along the road from Hexham to Carlisle, and of some smaller streets; the houses are neither very light nor well built. On the north side of the town, near Burn, a small stream from the north, passes the east end of the town in its course to the Tyne. The houses are poor and irregularly built. At the east end of the town is an eminence, called the Castle Banks, on which are some rude Domesday descriptions of early unanswerable Roman antiquities.

The only manufacture carried on is that of cheese. There are a small market on Thursday, and two yearly fairs, chiefly for cattle. There are many coal-pits in the parish, in which 100 men are employed, besides boys. The living is a vicarage, of the clear yearly value of £33, with a glebe-house. There were in Haltwhistle township, in 1833, one endowed and three other day-schools, with 183 children, and one Sunday-school, with 143 children. In the rest of the parish there were eight day-schools with 215 children, and three Sunday-schools, with 164 children.

Hexham is in the south division of Tindale ward, 274 miles from London. The parish comprehends Hexham township, 4310 acres, with a population, in 1831, of 4666; and Hexhamshire, 24,060 acres, with a population of 16,003, or 5274, or 6062. Hexham is believed to have been a Roman station. Camden conjectured that it was Axelodunum, one of the stations of the 'Noticia,' on the line of the wall (per lineam Walli), which later annexed stations fix near it. Hadrian is recorded for being the Epicum ('Epicem) of Ptolemy, a town of the Brigantes, which others fix at Lancaster.

Two inscriptions on stones in the vaults of the antient church are considered as proofs that a Roman station did exist here. In the seventh century (A.D. 674) a monastery was founded here by St. Wilfrid, who erected the monastic buildings in a style of magnificence little known at that day. He built also three churches in Hexhamshire, the domain of which had been granted to him by the queen of Northumbria. A few years afterwards (about A.D. 678), on the division of the Northumbrian diocese into three parts, a bishop's see was established at Hexham, and continued for many years, until the bishops were driven out by the Danes, and the diocese was afterwards united to Lindisfarne. The abbey and town of Hexham were sacked by the Danes early in the ninth century; and in A.D. 875 it was again attacked, the church burnt, and the inhabitants massacred.

The bishopric of Hexham, which in the middle ages was seated here, a priory of regular canons of St. Austin, and bestowed on them the principal cathedral, and many other gifts (A.D. 1112). In the Scotch wars of Edward I. the town and part of the church were burnt, and the title-deeds of the priory were out by royal authority. The parish church, which retains the names of seventy-one priests of the tenth to the fourteenth century, is a ruinous church, with an inscription 'pant,' or reservoir, the water to which is conveyed by pipes. In the market-place is an antient stone building, with a dial in front, formerly used as the town-hall of the bishops and priors of Hexham, and now used as a sessions-house. There are a bridge over the Tyne near the town, and three supplementary arches to allow passage to the waters in time of floods; a suspension-bridge over the South Tyne, near the town; and a bridge with two arches near the market-place, over the river Tyne, by which the town stands, not very far from the town-hall, is a square tower, used as a prison by the bishops of Hexham. But the most important building is the old priory church, now used as a parish church. It is a cruciform building.
with a central tower, above 100 feet high to the battlements, or 125 feet high to the top of the vane. The nave, burnt by the fire in the time of Edward I., has never been rebuilt; the transepts are separated from the choir by a screen richly carved in the lower part and adorned in the upper part by an emblematical painting. The choir is separated from its sole aisles by massive clustered pillars supporting pointed arches, and in the second tier of arches, of Norman character, separated by massive clustered columns; and above these again, a third tier of arches, pointed, supporting the wooden roof. There is a fine east window, and in the church are several antient monuments. There is a churchyard, and the plot of land which some have supposed to be part of the original Saxon church built by Wilfrid. At the west end of the church are the remains of the monastic buildings; the refectory is yet entire, and is occasionally used as a room of entertainment. It is very spacious, and has an oak roof. There are some remains of the cloisters, which show the richness and excellence of their architecture. The gateway of the abbey, supposed by many to be Saxon, is also standing. There are two Catholic chapels, a Scotch church, and two or three other dissenting places of worship in the parish.

Several manufactures and branches of trade are carried on,—spinning wooden yarn, hat-making, tanning, leathering, and glove-making. The market is on Tuesday for provisions, on Saturdays for cloth, and on Thursdays for butchers' meat. A market for cattle is held on the alternate Tuesdays during a considerable part of the year. There are two yearly markets for horses, cattle, sheep, and stock-fish; and these, being in August, various qualities of lamb are sold. The Midsummer sessions for the county are held here, and petty-sessions for the ward every month. In the western part of the town is a house of correction for the county.

The living is a perpetual curacy, of the clear yearly value of £394, in the peculiar jurisdiction of the archbishop of York.

There were, in 1833, a grammar-school, with a small endowment and 85 scholars; a school partly supported by subscription, with 30 scholars; and another school, with 200 scholars; and six Sunday-schools, with about 703 children.

Rothbury is in the west division of Coquetdale ward, 904 miles from London. The parish comprehends 35,170 acres, and is divided into twenty-four townships; the population in 1831 was 3699; that of the township of Rothbury, 1014. This place is delightfully situated in a retired spot on the north or left bank of the Coquet. On the north and east it is bounded by the river; on the west, the valley in which the town stands presents a fine prospect. Rothbury consists of three streets, wide, airy, and lined with tolerably well-built houses. The market-place contains a cross. The church, which is very antient and was formerly larger than at present, is of the form of an octagon, very spacious, and contains an antient font and several monuments. Near the church is a school-house. The river Coquet, on the south side of the town, is crossed by a stone bridge of three arches, and on the opposite side of the river is Whittington, one of the antient borderers' houses, now converted into the rectory and surrounded with plantations. Rothbury is frequented in summer by invalids, who come here to drink goats' wine and enjoy the healthy and bracing air of the place.

There is a market for provisions on Friday; there are four yearly fairs, one of them a statute fair for hiring servants, and two of them cattle-fairs. The living is a rectory, of the value of £111 16s. 4d. in the year, of which £10 10s. 4d. is from a glebe-house. There were in 1833, in the township, an endowed grammar school, with 62 boys; another endowed school, with 45 girls; and three other day-schools, with 63 children. In other parts of the parish there were one endowed school, with another school, with 122, and three other schools, with 25 children; and two other day-schools, with 92 children.

Wooler is in the east division of Glendale ward, 320 miles from London. The area of the parish is 4620 acres, and it had in 1831 a population of 1526. The town consists of a number of streets and lanes, with the market-place in the centre. The country round is well cultivated, but the town is ill paved and the houses are mean. The church is a neat building, erected about the middle of the last century; there are several dissenting places of worship.

The market is on Thursday, cheshire for corn; there are two yearly fairs in the town; the latter, which is held in October, is for cattle, sheep, and cattle and sheep fair in September at Fenton in the parish; and a large cattle and sheep fair at Westwood bank, near the town, on Whitsunday. The living is a rectory, of the clear yearly value of £774, with a glebe-house. There were, in 1833, a grammar-school, supported by contributions, with 56 children; a school of industry, supported by subscription, with 32 girls; ten other day-schools, with 259 children; and five Sunday-schools, with 374 children.

There are also a large abbey, and the thick walls of an antient tower, probably of Norman origin, and erected for the purposes of border warfare. On a hill called Humbleton Hugh, about a mile from the town, is a circular entrenchment, with a large cairn; and on the side of the hill are a number of terraces; and yet another, the origin and purpose of which have existed much conjecture. In the plain beneath this hill is a saxon pillar, commemorative of the battle of Humbleton, page 1 a. 1492.

Alnemouth or Alnmouth is in the parish of Linsley, and in the south division of Bamborough ward, 313 miles from London. The area of Linsley parish is 4540 acres; the inhabitants, in 1831, were 975, of whom 415 were in Alnemouth township. This place may be considered as the port of the river Aln, and a Sunday school was established here in 1828, as the result of various agricultural produce to the metropolis, and of wool to the manufacturing districts of Yorkshire. The harbour is inconvenient, but is capable of much improvement. There are several low-lying islands, and little bit of land which is also a sand-bank, for which the inhabitants are engaged in fishing. On an entrance at the mouth of the Alne, insulated at high-water, is a small burial-ground, in which are the ruins of a chapel. Numerous bones have been dug up in or near this burial ground, and several stone coffins have been found. The village between Alnwick and Alnemouth it contains nothing remarkable. The living is a vicarage, of the clear yearly value of £269, with a glebe-house. There were, in 1833, in Alnemouth township, two day-schools (one chiefly supported by subscription), with 98 scholars; one Sunday-school, with 50 children, and in the rest of the parish, two day-schools (one endowed), with 96 children; a sewing-school, with 15 children; and two Sunday-schools, with 114 children.

Hartley is in Earlsdon parish and in Castle ward, 10 miles north-east of Newcastle. Seaton Sluice is in the township of Hartley, about a mile to the north of the town. The area of Earlsdon parish is 11,060 acres; the population, in 1831, was 13,600, of whom 12,850 were in the township of Seaton Sluice; in which the parish is divided, was 1826. Sir Ralph Delaval, in the time of Charles II., constructed a haven at the mouth of the Seaton Burn, which flows into the sea in the township; and in order to prevent the harbour being filled up with the sea it has been necessary to renew this haven. Sir Ralph Delaval, who was the first entrance by a cut through the solid rock. This improvement has rendered the harbour more accessible at all times and in every state of the tide; it is capable of holding twelve or fifteen vessels of 300 tons, which can ride in safety, and enter or leave the harbour safely laden. The principal trade of the place is in the cable, drawn from the collieries of the parish, in which nearly 500 men are employed. There is a bridge over the new entrance to the harbour. There are in the township glass-houses for the manufacture of bottles, some mulberries, and a brewery. There are Presbyterian and Methodist meeting-houses. Nearly opposite Hartley town is a small island, and on the eastern end of it stood a chapel and a hermitage. There were in the township, in 1831, three day-schools, with 154 children, and one Sunday-school, with 180 children.

Warkworth is in the east division of Morpeth hundred and 206 miles from London. The area of the township is 21,089 acres, and it had in 1831 a population of 1246. The town consists of an area of 16,110 acres, divided into eighteen townships; the population of Warkworth township, in 1831, was 614, that of the whole parish 2478. The town is on the south side of the river Coquet. There are a number of small houses, the chief being, from the south and other necessary, considered a desirable place of residence. The church is an elegant and spacious building, part of it of considerable antiquity; the tower and spire are above 100 feet high. There are places of worship for Me-
Theophilus and Presbyterians. Immediately adjacent to the town is the ancient castle, held at different periods by the desendants of Roger FitzRichard, and by the families of Kuly and Percy, to the latter of which it still belongs. It is a noble pile, finely situated on an eminence above the river Coquet. The keep is an octagon, having a projecting tower in the middle of the four principal faces. The entrance is by a flight of steps in the tower on the south face. There is a chapel in the parish for Methodists and Presbyterians. There are extensive collieries, in which upwards of 900 men are employed.

At Howdon (or Howden) Pans (so called from the numerous salt-pans, now discontinued), are large docks, in which large frigates and men-of-war were formerly built, but now only colliers. There is a covered road from the docks; and at East Howdon, close by, is a manufactory for coal-tar, varnish, and lampblack. There are staiths along the river, from which a great quantity of coal is shipped for London. There are also in the parish extensive lime-kilns and manufactories for copperas and earthenware. The parish of Wall's End takes its name from the Roman wall ending here on the north bank of the Tyne. There were, in 1833, sixteen day-schools, with about 551 children; a national-school, with about 180 children in the week and 200 on Sundays; and five Sunday-schools, with 490 children.

Ford is near the Scottish border, on the right bank of the Teviot, about 9 miles from the mouth of the river. The parish comprehends an area of 12,220 acres, and had, in 1833, a population of 2110. The village consists of one irregular street, on an eminence rising from the river, over which is a bridge. Ford Castle is on the north side of the village and was the residence of Sir William Heron, and was in great part rebuilt by the late Lord Delaval. Of the original structure only two towers on each flank of the present edifice remain. The castle commands a fine prospect up the valley of the Till as far as Wooler. The seat of importance is the vicarage, which suffered severely from the Scots in an incursion in the year 1385. It was taken by James IV. A.D. 1513, just before the battle of Flodden (which was fought in this parish), and was again captured, with the exception of a peace tower, in 1549. Besides the parish church, there are two dissenting places of worship. Nearly 200 men are employed in the parish in the coal-pits and stone-Quarries. There were, in 1833, six day-schools, with 197 children; one day and Sunday school, with 60 children in the week; and 26 on Sunday; and one Sunday-school, with 15 children.

Corbridge is in the east division of Tindale ward. The parish has an area of 13,130 acres, with a population, in 1831, of 2991, of which 1292 were in the township of Corbridge. This latter is one of the most ancient seats of the bishop of the Tyne, over which there is a bridge of seven arches. It consists of a main street, along the road from Newcastle to Hexham, and several smaller streets. There is a spacious market-place, which formerly formed part of the ancient structure, of larger dimensions formerly than at present; and at the north-east corner of the market-place is an ancient tower, formerly used as a prison, and now as a lock-up house. Corbridge was formerly a place of importance and a market-town. It had four parish churches, three of them now demolished. There are traces of extensive buildings between this place and the adjoining Roman station of Corbech. This town suffered much from the Scots, A.D. 1396 and 1397. At the end of the 13th century, the bishop of Durham held the largest sheep-fairs in the north of England is held. The living of Corbridge is a vicarage, united with the chapelry of Haltin, of the clear yearly value of 48s., with a glebe-house. There was in 1833 a national-school in the town, with 61 children; and in other parts of the parish there were two day-schools, with 62 children, and one Sunday-school, with 48 children.

Divisions for Ecclesiastical and Legal Purposes. The whole county of Northumberland is included in the diocese of Durham; the district of Hexham, which was till lately in the peculiar jurisdiction of the archbishop of York, has been by an order in council added to the diocese of Durham. The whole county, with the detached portions of the city of Durham, comprises 1196 square miles of land; and is subdivided into the five rural deaneries of Newcastle (21 benefices), Corbridge (20 benefices), Bamborough or Bamburgh (17 benefices), Alnwick (20 benefices), and Morpeth (19 benefices); making the total number of
beneficiaries, in the year 1811 (when the Historical and Descriptive View of Northumberland, from which we take these numbers, was published), 97. The number of benefices in Hexhamshire is 7; these are included in the number assigned above to the deanery of Newcastle, to which that district has been added.

The Dissenters of Northumberland are chiefly Presbyterians, and the Presbyterian form of church government exists among them in greater completeness than is usual in England. Therefore, in 1811, in the county of Northumberland, in the detached portions of Durham, and in the town of Berwick-upon-Tweed, 44 Presbyterian congregations, viz. 27 in communion with the Kirk of Scotland; 11 in connection with the Scotch Seceders (viz. 5 Burghers, 4 Antiburghers, 2 of the 'Relief'); and 6 others not connected with any Presbyterian body. There were at the same time 5 Independent and 2 Baptist congregations, with a few scattered Baptist societies which met for worship but had no stated ministers. There were also 22 Catholic chapels, 11 of them attached to the residences of the Catholic gentry or supported by them. It is probable that during the last few years the number both of Catholic and Dissenting places of worship has been materially augmented.

The county is in the northern circuit. The assizes are held at Newcastle, to which the judges proceed from Durham. The quarter-sessions are held at Newcastle (Episcopal Cathedral). There are 13 sessions, at Morpeth, Hexham, and Alnwick.

There is a common gaol at Newcastle-upon-Tyne for the county of the town of Newcastle; to which the commitments were as follows:—1834, 477; 1835, 415; 1836, 539. The county gaol, the Hexham house of correction, and the Newcastle gaol, are for debtors as well as criminals; and on the average nearly half the commitments to Newcastle gaol are for debt.

Before the Reform Act, only six members of parliament were returned from Northumberland, viz. two knights of the shire elected at Alnwick, and two members, each returning two members. The northern division consists of Glendale, Bamborough, and Coquetdale wards; with Newcastle, held by the Reform Act, and two members each for the boroughs of Newcastle and Morpeth. By the Reform Act the county was formed into two divisions, each returning two members. The southern division consists of Tindale (or Tynedale) and Castle wards, and the county of the town of Newcastle. The court of election for this division is held at Hexham; and the polling-stations are Hexham, Newcastle-upon-Tyne, Haltwhistle, Bellingham, and Bywell. By the Reform Act this division was reduced to one member, but the new borough of Tynemouth was created, returning one member, so that the number of borough members remained as before. The boundaries both of Newcastle and Morpeth were extended; and Tynemouth was declared to include the townships of Tynemouth, North Shields, Chirton, Preston, and Cutlerceats.

Berwick-upon-Tweed returned two members before and after the Reform Act; the townships of Treadwell and South Carlton were added. The county was divided into two districts, with Harwood as the appointed town. The county is divided into two districts, with Harwood as the appointed town. The county was divided into two districts, with Harwood as the appointed town. The county was divided into two districts, with Harwood as the appointed town. The county was divided into two districts, with Harwood as the appointed town. The county was divided into two districts, with Harwood as the appointed town. The county was divided into two districts, with Harwood as the appointed town. The county was divided into two districts, with Harwood as the appointed town. The county was divided into two districts, with Harwood as the appointed town. The county was divided into two districts, with Harwood as the appointed town. The county was divided into two districts, with Harwood as the appointed town. 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Wall) considers that Agricola had carried a ditch and bank across the island, and that Hadrian repaired this and strengthened it by new defences. Perhaps some posts were maintained by this emperor beyond the line of the wall. In the reign of Antoninus Pius, the district between the two lines of forts formed by Agricola was reconquered by Lollius Urbicus, lieutenant of the emperor, who raised a rampart of turf (murus esquillitius) across the island in the district of Minorca, which may be compared to the ramparts of the Romans and the yet unsubdued natives were renewed under Marcus Aurelius, the successor of Pius, but the historians of the period give us no particulars. In the following reign Northumberland and the rest of the country between the rivers Tyne and Wallsend on the south side of the Tyne were reconquered and fortified by the tribes which inhabited them to seem to have united into one body, called by the Romans Macca (Maddren), a name which is supposed to be derived from the British word 'meath,' denoting a plain. Severus was engaged in active frontier against these natives (A.D. 207-219): he lost 30,000 men, but ultimately obliged them to submit. He carried a strong wall (murus) across the island nearly in the line of Hadrian's rampart. Hostilities were soon renewed by the natives, and Severus died at York in must of his preparations to extinguish them (A.D. 210 or 211). Caracalla, his successor, hastily made peace with the natives; and it is likely that the independence of the country north of the wall was tacitly admitted if not recognised, though some fortified posts may have been left. Under the tenets of the subsequent history of the country during the Roman period is obscure: it was probably the seat of hostilities under Constantine and Valentinian (Amianus Marcellinus, lib. xxvi. 4). Under the emperor Theodosius pieces of an iron wall of Roman general, recovered this and the adjacent districts, to which the name Valenteia was given. When the Roman power in Britain was vigorously wielded, this province appears to have been subject to the Romans; when the administration of the country was carried by the natives resumed independence and perhaps active hostility.

The most remarkable monument of the Roman dominion is the great line of defence formed and augmented by the successive labours of Agricola, Hadrian, and Severus; and something is known of the wall in every part of the ancient Noric Wall. Some account of these great works has been given elsewhere. [Britannia, vol. v, pp. 444, 445. We have here only to notice in connection with the position and traces of the stations along their line (per lineam suffl) which are in some measure worked after.

The first station, Segedunum, is generally fixed at C扶ren's house, Wall's End, between Newcastle and Tynemouth: there are no remains. Pons Ellis, the second station, was, in all probability, at the mouth of the Tyne, near Morpeth. This is supposed to have been one of the favourite stations of Agricola, and was perhaps the seat of the administration of the province. The place is marked in the course of the survey of the line of the wall, and is a strong, if unimprovident, station of the times.

The next station is seated near Corbridge, which is a town remarkable for its walls, and well protected by them. There are some remains of the station at the west side of the town, and the modern inhabitants have built houses in the ancient station. Corbridge was, in all probability, the seat of the administration of the province in the time of Severus.

The second station, which is remarkable for its preservation, is that of Vindolanda, which is on the north side of the Tyne, near the mouth of the river. This station appears still to have been a station, and is well preserved. It is a strong, if unimprovident, station of the times. The place is marked in the course of the survey of the line of the wall, and is a strong, if unimprovident, station of the times.

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and breathworks of earth. At Old-town in Allendale are the traces of another camp or station, and many antiquities have been discovered there; and near Bamborough, in the Northumbrian district of Brancaster, are several ancient camps or stations, near Hexham, near Carlisle, and in other places. Altars, inscriptions, or other antiquities have been dug up or found at Elsdon in Redesdale (the Valley of the Reel), Simonsburn, near the North Tyne river, and in other places, and it is said that some Saxon monuments are there built. Indeed, in the number of Roman inscriptions and sculptures discovered in it, Northumberland very far surpasses any other English county.

In the reign of Cadwallader, the Romans in the fifth century. Northumberland became the prey of the Picts and other barbarians, who broke through the wall and ravaged the island. When the Saxons were invited to oppose these invaders, a body of them, under Oda and Ebuas, were posted by the wall at the east end of the Roman wall (perhaps a.d. 454); but it was not till near a century afterwards (a.d. 547) that a serious attempt was made at the permanent conquest of this part of the country. A considerable part of the country between the Humber and the Forth was divided into the two states of Bryneich and Deifyr; and it is probable that Northumberland was included in Bryneich, the northernmost of these. Perhaps some portions of the county may have been included in the district of Gododin, or Godin, who was subjugated in that of Angle, which was governed by Urian, the patron of the bard Taliesin. The invaders were Angles, and their leader, Ida, though he experienced a stout resistance from the natives, especially from Urian, laid the foundations of an Anglo-Saxon kingdom, and built a castle on the coast, to which he gave the name of Bamborough; or perhaps he seated on a Roman fort, and added to it some further defences of his own. Ida died a.d. 560. The reigns of his immediate successors were brief, and not marked by any particular events: but the power of the invaders gradually extended. One of their chief men, named Ella, separating himself from the other Angles of Bryneich, founded the kingdom of Deifyr, which extended from the forest that occupied what is now the county of Durham; and other warriors, penetrating to the southward, established the state of Mercia, the latest founded of the Anglo-Saxon kingdoms; first a dependency of Deifyr, but at length an independent state, and the powerful competitor of Wessex for the supreme dominion of Britain. The two kingdoms of Bryneich and Deifyr were frequently united, and, when so united, constituted the great kingdom of Northumbria (we appropriate this form of the name to the kingdom, Northumberland, and the county: afterwards the county will give a sketch here). This kingdom extended along the eastern shore of the island from the Humber to the Forth, thus including a considerable portion of the lowlands of Scotland, bounded on the west by the kingdoms of Strathclyde, or Vale of Clyde, and Cumbria, which extended south to Lancashire. The boundary of the Northern Angles and Cumbrian and Strathclyde Britons is not clearly ascertained, and probably varied much with the changing fortunes of the parties. The superiority of the invaders was however gradually but firmly established.

Ethelfrith or Áedelfrith, grandson of Ida, distinguished himself by his vigorous attacks on the Britons. He carried his arms into their territories, gained a great victory near Chester, and massacred the monks of Bangor, or Bangor, and on the Dee in Flintshire (who had accompanied the British host into the field), and demolished their monastery. These transactions are variously dated a.d. 602 to 612 or 613. Ethelfrith, the son and successor of Ella (a.d. 717) by Redwine, Queen of East Anglia [Norfolk], and succeeded by Edwin, of the race of Ella of Deifyr, whose history is given elsewhere.

[Edwin.]

On the death of Edwin (a.d. 633), under whom the two Northumbrian kingdoms were united, his dominions were ravaged by the combined Mercians and Britons. Osric, a kinman of Edwin, who succeeded to the crown of Deira, or Deifyr, and Fanfrid, son of Ethelfrith, who succeeded to Ber- nicia, or Bryneich, restored paganism, which Edwin had repressed (a.d. 634). The Britons were both subdued at Cadwallader, the Briton, who seized both the Northumbrian kingdoms, but was himself defeated and slain by Oswald, another son of Ethelfrith (a.d. 634 or 635), in the neigh- bourhood of Hexham, perhaps at St. Oswald's, in the line of the Roman wall. Oswald succeeded to both the king-
Obert and Ellis, who, on the approach of the Danes, made peace with each other, and divided the kingdom between them. They both fell in an attempt to recover York, which the Danes had taken. That part of Northumbria which was north of the Tyne he retained, but he was expelled by the Northumbrians, and succeeded by Rieger, after whom came another Egbert. In this period the Danes made an entire conquest of the country, and settled in it. Halfdane became sovereign, and divided the kingdom with the Northumbrians.

It is difficult to trace the causes which led to so complete a subjugation of the north of England by these invaders. Perhaps the strength of the Northumbrian kingdom had been consumed in the domestic strife of so many years, or the desire of the people to see the late Athelstan, the conqueror of the dominion of strangers to that of their rivals. It may be, too, that the ferocity engendered by a long period of anarchy had prepared the population for a ready coalition with those to whose habits their own had become assimilated. However this may have been, the conquest was complete; and in the treaty which Alfred made with the invaders, Northumbria was included in the Danelagh, or Danish territory. On the death of Halfdane (a.d. 983) Guthfrith, the last over part of Northumbria, of Deira and Bernicia, to which latter kingdom the name of Northumbria began about this time to be restricted, though we shall still use it in its more extended application.

The territory between the Tyne and the Tees was bestowed in a.D. 991 on Northumbria was given to Athelstan, then bishop of Lindisfarne, and became thus the portion of the bishops of Durham, and the foundation of their palatinate jurisdiction. On the death of Guthred, who, though of Danish birth and lineage, appears to have embraced Christianity and been converted as English, appear to have submitted to Alfred. Eric, or Eohric, is recorded as the leader of those who remained pagan; but he recognised the supremacy of the West Saxons.

Against the successors of Alfred the Northumbrian Danes continually renewed the struggle, but always with ill success. On the accession of Edward the Elder (a.d. 901), Eric and his followers supported his competitor Ethelward; but Ethelward and Ethelred fell in battle, and Northumbria submitted to Edward. A new invasion or insurrection of the Northmen, under Regnald, Sihtiric, and Niel, or Nigel (the last two being sons of Ingvar, or Ivar), followed; and as far as we can gather from Simon of Durham, they defeated a body of whom descended from Ethelred to Canute, by whose order they were slain (a.d. 1016). His death was avenged by his son Alred II., who slew Thorbrand, Canute's instrument in the murder; but was himself slain by Charles, son of Olaf, king of Norway. The last attempt of Alred was made in 1020, when he and his brother Eadulf, who defeated the Britons of Strathclyde, but was killed by Siward, who became earl of Northumberland in his room.

These transactions show the anarchical state of Northumberland, the result of that practical independence which its remoteness from the seat of the supreme government secured to it. Siward held the earldom of York as well as of Northumberland (a.d. 1042-1055), and ruled with vigour and success. He formed one of the band of nobles who counterbalanced, during the reign of Edward the Confessor, the power of Earl Goodwin, or Godwin, and his family; and the share he took in the restoration of Malcolm III. Caunoire to the throne of Scotland has been made the subject of the "March of Shakspeare." On the death of Siward, his earldoms were granted to Tosage, brother of Harold, afterwards king; but his northern subjects rejected him and chose Morcar, or Morkar, son of Algar, earl of Chester, in his room (a.d. 1065). Morcar appointed the earldom of Northumberland to Osulf, a descendant of the former earls, but in submission to himself.

On the Conquest (a.d. 1066), William imprisoned Morcar and deposed Osulf from his earldom, which he conferred on his brother Ousliff. Ousliff died in 1077, and the earldom passed to his son Earle, who was killed in a rising of the Northumbrians by Count Robert and his army, under a Saxon, whom William afterwards expelled from the earldom; by Waltheof, son of Siward, another Saxon, as traitor at Winchester; by Walcher, bishop of Durham, and
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(W.M.). Wark Castle was besieged, but in vain, and the western side of the county ravaged, as far as the Tyne. On the approach of Stephen, the English king retired, they again advanced, and ravaged the eastern part of the county. Norham Castle was taken and demolished, and Wark a second time besieged, but with no better success than formerly: it was however blockaded for several weeks. In the battle of the Standard at Northallerton, he resumed the siege of Wark, and at length obliged the garrison to capitulate (A.D. 1138). Peace was soon after concluded and Henry's claim to the crown admitted, and taken by the Scottish royal family in Henry II., and that of Northumberland bestowed as a compensation.

In the civil strife near the end of the reign of Henry II. William the Lion, king of Scotland, seduced the religious princes; and entering Northumberland, besieged Wark Castle, which had been restored (A.D. 1173). The peace was broken, and the English in return crossed the Tweed and burned Berwick, but hostilities were suspended by a truce on the expiry of the truce county was again invaded by the Scots. Harbottle and Warkworth castles were taken, and Prudhoe and Alnwick castles besieged. While before the latter, the Scottish king was surprised and taken prisoner (A.D. 1174). This event led to a peace by which the claim of John, Northumberland again was the scene of hostility (A.D. 1215). The insurgent barons were supported by the king of Scotland, who hoped to possess himself of the county. Norham Castle was taken and besieged by the Scotch, and Wark were destroyed, to prevent their falling into the hands of John; and the town and castle of Berwick were taken and afterwards burnt by his mercenaries, who advanced into Scotland and captured several towns. The king of Scotland received from the dauphin Louis, in the person of John, who was the English crown he admitted) the cession of Northumberland and some other of the northern counties; but did not succeed in gaining possession of them; and at the peace concluded about the commencement of the reign of Henry III., the state of Northumberland was回复原样.

In the reign of Henry III., the Scottish king Alexander II. invaded Northumberland and advanced to Pontefract while Henry with the English army was at Newcastle (A.D. 1244). Peace was however made without a battle.

When war broke out between Edward I. and John Balliol, king of Scotland (A.D. 1296), the king of England assembled his army at Newcastle, and marched to the relief of Wark, which was threatened by the Scots. He crossed the Tyne near Winchburgh (1297), and advanced into the county, taking the castle of Norham and ravaging the districts of Redesdale and Tindale; destruc-

tion of Corbridge; burned the town, monastery, and church of Hexham, and committed other devastations (A.D. 1297), and after he again entered the county under Wallis, after defeating the English at Stirling and recapturing Berwick, and having established their head-quarters at Edinburgh Forest, devastated the country all round: and after a vain attempt upon Newcastle and Carlisle, returned to their own country (A.D. 1297). Early the following year the English army assembled at Newcastle, and marched into Scotland, entered Berwick, which the Scots had deserted.

Edward II. was at Newcastle (A.D. 1310) in an expedi-
tion against the Scots; and spent the winter of 1310-11 at Berwick, which might at this time be considered as an English town. Next year, while Edward invaded Scotland, Robert Bruce ravaged Tindale and Redesdale in Northumberland in the king's favour; de Gaveston were seized by the insurgent barons at Newcastle, and marched to Berwick to the great loss of Bannockburn. After that disastrous defeat, Northumber-

land was ravaged almost without resistance, and the terrous Scots penetrated into Yorkshire. A part of the inhabitants of Tindale and Redesdale were obliged to w

a Norman, murdered in a tumult at Gateshead; by Albert, a Norman; and by Robert de Mowbray, a Norman. In the stout resistance offered by the men of the north of England to the Norman power, and in the barbarous vengeance by which that resistance was punished, few events can be connected with the county of Northumberland, except the removal of the body of St. Cuthbert from Durham to Lindisfarne, or Holy Island. It is probable that the county was then in a primitive state, and that the wealth, its ancient sources of wealth, its mineral treasures, required a more peaceful time and a more advanced civilization to develop them. It may be supposed that the dissension and anarchy which had for two centuries pervaded the kingdom, and the invasion and the plunder of the manners of the barbarous Northmen, had thrown back the population in the scale of social improvement, or at least retarded their advance. When William (A.D. 1068 or 1069) had wasted and depopulated the most densely inhabited tract between York and Durham, it seems to have disregarded the country beyond the Tyne. We do not find that he penetrated into it, except in his way to invade Scotland (A.D. 1072), and in his return. The county, as well as Cumberland, Durham, and Westmorland, is omitted in *Domesday Book.* About this time it was exposed to the ravages of the Scots, who are said to have carried off so many of the inhabitants, that there was scarcely a house in Scotland without one or more English slaves.

The princes of the period of Henry I. had established their territories and consolidated their power, and as the Anglo-Norman princes on the other hand grew in wealth and resources, Northumberland became subject to the evils and received the constitution of a border county. The earldom became merely titular, and the government of the county was vested in the high-sheriff, who was entrusted with unusual powers. The county was subordinated into baronies, which were arranged in six wards and subdivided into constabularies. England, because of the occupation of the borderers on both sides of the frontier, and they alternately inflicted and endured the miseries of petty but uninterrupted warfare. Agriculture in its primitive state was neglected, and the castle became the chief property of the lordship, and towns and villages erected in all parts; and every habitation was constructed with a view to defence as well as residence. Resistance to the plunderers led to scenes of blood, and bloodshed laid the foundations of deadly feuds. The borderers acted for the most part as light cavalry, called *prickers,* and rode small but nimble and well-trained horses. Those who acted as infantry were of excellent skill and courage. They had their places of rendezvous, to which they repaired at the sign of the black cross. The English, in the use of their national weapon, the long bow; and their onset, when they closed, was signalled by the war-cry or *slogan,* The fierce and unsettled habits caused by such a condition continued till modern times. The inhabitants of the northern border, toward Berwick upon Tweed, were the first brought into a more peaceful way of life; but amidst the wastes and fastnesses of the western side of the county the borderers have only at a comparatively late period become assimilated to the rest of their countrymen.

In the reign of William Rufus, Northumberland was twice invaded by Malcolm III. Canmore, king of Scotland. His first invasion (A.D. 1091) was retaliated by William, and Malcolm was compelled to submit. In his second invasion (A.D. 1093), after committing great ravages, he was surprised and slain, with his eldest son Edward, while besieging the castle of Alnwick, by Robert de Mowbray, earl of Northumberland. This Robert soon after conspired, with other nobles, against William; but that king crushed the conspiracy by his alacrity, besieged successively Tynemouth and Bamborough castles, and took Mowbray prisoner.

Upon the accession of Stephen to the throne of England, David I., king of Scotland, having determined to support the claims of the empress Eudo, invaded the north of England and took Wark and Norham castles, and the towns of Alnwick and Newcastle. He failed in his attempt to take Bamborough; and upon the advance of Stephen peace was made (A.D. 1138). A short time after, the king, having advantage of Stephen's absence in Normandy, again broke into Northumberland, to support the claim of his son Henry to the earldom of that county; but agreed to a truce until Stephen should return and give his decision of the claim. On the refusal of Stephen to admit this, war recommenced
allegiance to the king of Scotland; and the ravages of war reduced their holdings in England to such distress, that they were obliged to eat the dogs and horses, and a quarter of what was sold for forty shillings, an enormous price at that time. The disorganised state of society led also to the formation of numerous bands of marauders, such as the Morpeth and the Throckmorton, and the castles of Wark, Harbottle, and Mitford were taken by the Scots, who seized the whole county, except Newcastle and a few strongholds, and penetrated farther into England. Next year (A.D. 1319) the English, under the command of the king, made a strenuous but unsuccessful attack upon Berwick; and in 1322 they renewed their devastations. Hostilities were afterwards suspended by a truce, which continued till the deposition of Edward II. (A.D. 1327).

At the commencement of the reign of Edward III. the Scots renewed their ravages in this county, and the king, a boy of fifteen, who pursued them with a vast army, was unable to overtake them. In the course of the summer, the Scots took Norham Castle and attempted Alnwick, but failed. Peace soon followed, by which the town of Berwick was restored to Scotland.

In 1333 war broke out again. Edward besieged Berwick and ravaged Scotland; the Scots in return ravaged Northumberland, perhaps on the notion of retaliation; and the queen was the extremity to which the garrison of Berwick was reduced obliged the Scots to march to its relief; they were defeated at Halidon Hill in the immediate vicinity, as the town of Edinburgh was taken, and the Scots were driven into Northumberland; in the latter year they were repulsed in attacks upon Newcastle and the castle of Wark. In 1346 they wasted the southern part of the county. In 1355 they surprised the town of Berwick, but failed in their attempts to take it, and early in the following year (1356) the town was retaken.

In the year 1372 the quarrels of the borderers brought on a severe battle at Carham, in which the Scots defeated a superior number of English. In 1378 the castle of Berwick was attacked without much resistance, and in 1384 with a powerful force for nine days, when it was taken. In 1384 the same castle was betrayed to the Scots, but was recovered by Percy, earl of Northumberland, the father of Hotspur. In 1385, when an English army ravaged Scotland, the Scots broke into Northumberland, ravaged it as far as Newcastle, and took and demolished Wark, Ford, and Cornhill castles.

In 1387 the Scots again entered the county and ravaged it; on their return they defeated and took prisoners Hotspur and Douglas, who, entering the town by the dikes, had attacked them at Otterburn. Earl Douglas, the Scottish commander, fell in this battle, which, it has been supposed, has furnished the subject of the old ballad of 'Cherty Chase.' It is fairly and graphically described, chiefly after Froissart, in Tytler's History of Scotland, vol. iii., p. 53.

The early part of the reign of Henry IV. was marked by hostilities on the border. In A.D. 1400 the Scots took and demolished Alnwick Castle, but were defeated at Fulholpeaw in Coquetdale; another inroad in 1402 was chastised with a similar defeat, and led to the more important battle of Homeland, or Humbleton, near Wooler, where the earl of Northumberland, his son Hotspur, and the Scotch earl of March, defeated about 10,000 Scots under the earl of Douglas, who was taken prisoner. The revolt of the Percies and the battle of Shrewsbury (A.D. 1403) arose from the king's demanding that they should deliver up the prisoners taken at Homeland. The town of Berwick, which was taken by the Scots, was retaken by the English in their second revolt (A.D. 1405), was surrendered to the king's forces, as were the castles in the county held by the earl or his supporters. In the reign of Henry V. (A.D. 1419), Wark Castle was the scene of a battle which was immediately retaken, and the Scots burned Alnwick.

In the reign of Henry VI. (A.D. 1436) a severe battle was fought at Pepperdene, just within the border of the county, not far from Corbridge, between the earl of Northumberland (the son of Hotspur), or perhaps Sir Robert Ogle, and Douglas, the earl of Douglas. The battle was very serious, and the earl of Northumberland was killed. The Scotch were defeated. This battle has furnished, according to some, the origin of the ballad of 'Cherty Chase,' rather than that of Otterburn; but the presence of the earl of Northumberland is not noticed by some of our authorities.

In the civil war of the Roses, most of the barons and other inheritors of Northumberland embraced the Lancastrian party. The earl of Northumberland was slain in the first battle of St. Albans, A.D. 1455, and his son Thomas Percy, lord Egremont, at that of Northampton, A.D. 1460, both fighting on that side. The next earl, son of the previous earl, who was in the service of Richard Percy, in the great battle of Towton (1461).

In the year 1462, Peter de Bresté, a French captain of note, engaged by the Lancastrian party, landed with a small force in Northumberland, and was besieged by the Yorkists at Berwick, but escaped with the aid of the Scotch. Next year, Margaret of Anjou, queen of Henry VI., landed near Bamborough, and took Alnwick, but withdrew on the approach of Edward IV. into Scotland. Some of her forces, being driven, landed on Holy Island, were made prisoners, and Alnwick, Bamborough, and other strong castles were taken by the Yorkists. In 1464 the queen re-entered Northumberland with a numerous army. Bamborough castle was surprised, and many of her partisans took arms in her favour. But a party of her forces was defeated at Hedgley Moor, eight or ten miles north-west of Alnwick; and the main body was utterly routed near Hexham by the Lord Montacute, Yorkist warden of the Eastern March (A.D. 1464). In the battle of Hedgley Moor, Sir Ralph Percy, brother of the earl of Northumberland, was slain; the 'Percy Cross' marks the spot where he fell. Lord Montacute received, as the reward of his victory, the title of Earl of Northumberland and the forfeited inheritances of the Percies. Lord Percy took Bamborough and wasted the Scottish border. Berwick had been besieged and stormed by the Lancastrians to Scotland during these troubles, but was restored to England by treaty (A.D. 1492).

In the attempts of Perkin Warbeck to dethrone Henry V. of Northumberland and was defeated by that pretender, in company with an army of Scots and foreigners under James IV. of Scotland. The country was cruelly devastated, but on the approach of an English army the invaders retired (A.D. 1496). Next year James renewed his invasion, but neither to the injury of the English border, nor to master the strongholds of the border. He besieged Norham with vigour, but failed to take it, and soon afterwards withdrew to his own country. In the reign of Henry VIII., a body of 3000, or, according to some, of 5000 Scots, under Lord Hume, were cut off, on their return from a marauding incursion into the county, at Millfield, near Ford Castle (A.D. 1513). The king of Scotland, James IV., eager to revenge the defeat of his brother at Flodden, approached Northumberland with a large and numerous army, forced the garrison of Norham to surrender upon terms, and took and partly demolished Wark, Eral, and Ford castles. While he dined with lady Heron at Ford Castle, the earl of Surrey, the English commander, advancing with the Lord Thomas Howard, admiral of England, Lord Dacre, and other men of note and power in the north of England, and an army of about 30,000 men: the armies met at Flodden, near the spot where Hume, whose defeat the king desired to avenge, had been overthrown. The Scots were probably more numerous by nearly 10,000 men (Tytler's Hist. of Scotland: Notes and Illustrations), but the mismanagement of the king ensured their defeat: James fell on the field, with the greater part of the brilliant train of nobles who had accompanied him, and probably about 15,000 men. In 1523 the county was invaded by the duke of Albany, regent of Scotland, who, with his French auxiliaries, besieged Wark Castle. But the English were unable to prevent him, and therefore they remained on their own side of the river. Part of the castle was taken, but the other part held out, and ultimately the assailants were driven off. In 1524 a small force of Scots renewed the invasion, but were defeated at Brauxton; and some incursions were made in various years from 1522 to 1558. But the advancement of the power of England, and the establishment of better arrangements along the border, combined, with the internal dissensions of Scotland, to diminish the frequency of the Scottish incursions, and to prevent destructive ravages of the English in the south of Scotland. Berwick was the point from which the armies usually took their departure.

In the rebellion of the northern earls of Northumberland and Westmoreland against Queen Elizabeth (A.D. 1569), Alnwick and Warkworth castles, which were held by the
ear of Northumberland's retainers, were taken by the queen's officers. The insurgent nobles passed through Hexham in their retreat from Durham into Cumberland. The assassination of the earl of Murray, regent of Scotland, whose vigorous administration had curbed the borderers, was followed by the capture of many Scots into England (A.D. 1659), and one or two other incursions took place before the union of the two crowns of England and Scotland on the head of James I. Soon after that event, the office of lord warden of the marches fell into disuse, the garrison of the castle was reduced, and the estate lost its antique character. It was long indeed before border feuds entirely disappeared; but they ceased to bear the character of national hostilities; and however national feeling might enter into them, they were treated as private quarrels or marauding excursions.

Of these many centuries of strife and consequent misery this county contains many memorials. The ruins of Norham and Wark castles still overlook the Tweed, and those of Heton, Dudhowe, and Ford rise on the banks of the Till or its tributary streams. At Norham is the most striking ruin: the walls of the keep are now reduced to a mere shell; the apartments in the basement are vaulted; the keep is a square tower of four stories above the vaults, but perhaps the most striking feature is the great tower which was once a prison. The basement has been demolished, and part of the hill on which the castle stands has been washed away by the river. Two towers of Ford Castle remain incorporated in a more modern building. Of the others there are only the earthworks and ditches, or perhaps the vaults of the basement. Norham, Heton, and Dudhowe are in Islandshire, which belongs to Durham.

Bamborough and Dunstanborough castles are on the coast. [Bamborough Castle is situated on a high cliff, and commands the deep cliffs on the north and east sides; on the south and west sides it was defended by a wall and towers, which are for the most part standing. The keep and other buildings of the interior, except the remains of a chapel, have disappeared. The entrance gateway on the south side is yet standing.]

In the interior of the county are Alnwick (Alnwick) and Warkworth castles, which last has been described already. Of Callatley Castle, near Whittingham, the western tower is of great antiquity: the rest of the building is more modern. Bothall Castle on the Wensbeck, Mitterford, Belsay, and Harharn castles, are all near Morpeth. The picturesque ruins of Bothall, which consist chiefly of the gateway, with its flanking towers, and the outer wall of the court in which it stands, are seen on an eminence above the river. There are considerable remains of Langley Castle near Hexham, and there are ruins of Blenkinsop, Belister, Thirwall, and Fetherstone castles, near Halt-well; and of the old Castle on the top of the hill and of Prudhoe Castle, the ancient seat of the Umfravilles, on the south bank of the Tyne, between Newcastle and Hexham. This last is one of the finest ruins in the county; it stands on a precipitous bank of the river 60 feet high. The gateway, a lofty embattled square tower, the outer wall, and the keep are yet standing; and there are the ruins of the chapel and other buildings.

The hostility to which the county was exposed rendered it necessary for the smaller proprietors to have their dwellings strongly built; their habitation were towers, with basement vaults to contain the cattle of the neighbourhood when driven in for shelter. Whitten Tower near Rothbury, now converted into a recusant-house, may be taken as a specimen of these dwellings, and it is a foot thick at the foundation, nine feet in the kitchen, and six feet in the chambers over it. In the basement vaults is a deep well. There are the remains of other similar towers in different parts of the county.

The domestic antiquities of the county are noticed elsewhere. [Durham, County; Tynemouth.] Of Hulne Abbey, for Carmelite friars, close to Alnwick, there are some remains. A tower, built by a former earl of Northumberland as a place of refuge for the monks, has been demolished; and the ruins of the church remain. Thirwell Castle, near Thirwell, was the seat of the ancient Thirwell family, Lords of Thirwell. Brinkburn Priory near Rothbury, for regular canons of St. Augustine, has been in great part demolished. The tower of the church, part of the side walls, and some of the arches remain. Typical examples of transition from the Norman to the early English styles. There are ruined churches or chapels at Old Bowick, between Alnwick and Wooler; Memmesterkirk, in Coquetdale ward, near the border of Scotland; Baldes near Morpeth; and Jesmond near Newcastle. The ruins last are incorporated in a farm-house and offices.

In the troubles of Charles I's reign this country suffered considerably. In the first campaign of Charles against the Scots (A.D. 1439), an army of 20,000 Royalists marched northward towards Berwick, but effected nothing; in a second campaign the Scots invaded Northumberland, and advanced to the Tyne. On the 16th August, 1640, they fell upon a detachment of the Royalists; and the horse were defeated with the loss of 300 men. When the war between the king and the English parliament broke out, the Northumbrians chiefly embraced the king's party. William Cavendish, marquis of Newcastle, led the county on a foray against Morpeth, and raised a regiment of Royalists at his own charge, at the head of which he fought at the battle of Marston Moor (A.D. 1644). Before this battle the Scots, under Lesley, travelled the country in march to support the Parliamentary forces; and, returning after their victory, took Newcastle by storm. The marquis, who had retired to the castle, was obliged to capitulate. Cromwell was entertained at Newcastle after his capture of Berwick in 1651, and marched to Scotland, just before his victory at Dunbar (A.D. 1650).

In the rebellion of 1715, the earl of Derwentwater, Lord Widdrington, and Mr. Forster, one of the county members, with several of the gentry, took up arms for the Pretender, marched towards Newcastle, and there, upon raising the standard of King James, they then marched to Morpeth, being in number about 300, partly Scots. Fire Morpeth they marched to Newcastle; but finding the gates shut, marched to Hexham, where another body of Scots joined them. They submitted to the king's forces, and returned to Newcastle. In the rebellion of 1745-46 this county took no share. The inhabitants of Newcastle armed in support of the government, but were not called upon to act.


Population.—Northumberland may be considered in chiefly a mining county, though a large number of persons are engaged in agricultural pursuits, and some in manu- facturing. It is the 37th on the list of agricultural counties. Of 63,810 males twenty years of age and upwards, 15,250 were engaged, in 1831, in manufactures and in manu- facturing machinery; and of this number 200 were employed by Byker, in making glass bottles and crown glass, 150 at Newcastle, 120 at the Linn, and 40 at Wharshaws and a burnshall; steam-engines and machinery for the colliers employed 79 men at Newcastle and 20 at Chilton. There were about 90 iron-founders at Sedgeley and Long Barns. Ten miles was by 20 men to low water; at Hexham there were 22 wool-combers and weavers. The spun yarn and linen thread employed about 300 persons, scattered in the villages throughout the county. Lead-mills, sheet-making, the making of chain-cables, &c., give employment to 300 men. To the north and north-east of Newcastle, North Shields, &c. There were engaged in agricultural pursuits 14,060 men, out of which number 10,441 were labourers. Of 13,393 men were employed as labourers in labour not agri-

The population of Northumberland at each of the following periods was—
### Occupations

#### Persons.

<table>
<thead>
<tr>
<th>Males</th>
<th>Females</th>
<th>Total of Persons</th>
<th>Males, twenty years of age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Houses.

<table>
<thead>
<tr>
<th>Wards, Towns, &amp;c.</th>
<th>Inhabited,</th>
<th>Families</th>
<th>Building</th>
<th>Uninhabited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bamborough (Ward)</td>
<td>2,107</td>
<td>2,230</td>
<td>15</td>
<td>66</td>
</tr>
<tr>
<td>Castle (Ward)</td>
<td>11,875</td>
<td>15,817</td>
<td>86</td>
<td>631</td>
</tr>
<tr>
<td>Gog (Ward)</td>
<td>3,922</td>
<td>4,456</td>
<td>17</td>
<td>1359</td>
</tr>
<tr>
<td>Glendale (Ward)</td>
<td>2,198</td>
<td>2,363</td>
<td>7</td>
<td>72</td>
</tr>
<tr>
<td>Morpeth (Ward)</td>
<td>2,288</td>
<td>2,816</td>
<td>5</td>
<td>92</td>
</tr>
<tr>
<td>Tindale (Ward)</td>
<td>7,508</td>
<td>8,623</td>
<td>32</td>
<td>297</td>
</tr>
<tr>
<td>Berwick-upon-Tweed Town of Newcastle-upon-Tyne, Town and County of the Town of</td>
<td>1,100</td>
<td>2,118</td>
<td>7</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>5,048</td>
<td>9,936</td>
<td>50</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>35,726</td>
<td>49,364</td>
<td>229</td>
<td>1,509</td>
</tr>
</tbody>
</table>

### County Expenses, Crime, &c.—The sums expended for the relief of the poor at the four dates of—

<table>
<thead>
<tr>
<th>£.</th>
<th>s.</th>
<th>d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>52,416</td>
<td>6</td>
</tr>
<tr>
<td>1811</td>
<td>72,621</td>
<td>8</td>
</tr>
<tr>
<td>1821</td>
<td>77,505</td>
<td>7</td>
</tr>
<tr>
<td>1831</td>
<td>74,092</td>
<td>6</td>
</tr>
</tbody>
</table>

The sum expended for the same purpose for the year ending March, 1838, was £61,446 1s.; and if it be assumed that the population increased from the years 1831 to 1838 in the same ratio as in the ten years preceding 1831, the above sum gives an average of £61,446 for each inhabitant. These ages are below those for the whole of England and Wales.

The sum raised in Northumberland for poor-rate, countyrate and other local purposes, in the year ending 25th March, 1833, was 99,147l., and was levied upon the various descriptions of property as follows—

<table>
<thead>
<tr>
<th>Description of Property</th>
<th>Total Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>On land</td>
<td>£60,921 5s.</td>
</tr>
<tr>
<td>Dwelling-houses</td>
<td>21,765 17</td>
</tr>
<tr>
<td>Mills, factories, &amp;c.</td>
<td>12,411</td>
</tr>
<tr>
<td>Manorial profits, &amp;c.</td>
<td>4,649</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>£99,748 3s.</td>
</tr>
</tbody>
</table>

The amount expended was—

- For the relief of the poor... £73,792 5s.
- In suits of law, removal of paupers, &c. 4,257 14
- For other purposes... 22,461 8

Total money expended £100,511 7

In the Returns made up for subsequent years the descriptions of property assessed are not specified. In the years 1834, 1835, and 1836, there were raised 95,655l. 8s., 87,641l. 6s., and 81,402l. 15s.; and the expenditure of each year, from 1834 to 1838, was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>£.</th>
<th>s.</th>
<th>d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1834</td>
<td>72,621</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>1835</td>
<td>77,505</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>1836</td>
<td>74,092</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

The saving effected in the sum expended in 1838, as compared with that expended in 1834, was therefore 22,911l., or 23 per cent.; and the sum expended for the relief of the poor in 1838 was less than that in 1834 by 16,537l., or rather more than 14 per cent.

The number of turnpike trusts in Northumberland, as maintained in 1836, was 14 (Acts 3rd and 4th William IV., c. 33); the number of miles of road under their charge was 479. The annual income arising from tolls and parish composition in lieu of statute duty in 1836 was 20,091l.,

showing an increase between the first and last periods of $5,811, or more than 29 per cent. on the whole population, being 29 per cent. below the rate of increase throughout England and Wales.

The following table is a summary of the population of every ward, &c., as taken in 1831.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>73,357</td>
</tr>
<tr>
<td>1811</td>
<td>80,385</td>
</tr>
<tr>
<td>1821</td>
<td>95,354</td>
</tr>
<tr>
<td>1831</td>
<td>106,147</td>
</tr>
</tbody>
</table>

*Note:* The numbers of persons charged with criminal offences in the three quarterly periods ending with 1829, 1832, and 1834, were 612, 570, and 719 respectively, making an average of 87 annually in the first period, of 81 in the second period, and of 103 in the third period. The number of persons tried at quarter-sessions in each of the years 1831, 1832, and 1833, in respect to which any costs were paid out of the county rates, were 27, 26, and 35 respectively. Among the persons charged with offences there were committed for—

### Felonies

<table>
<thead>
<tr>
<th>Year</th>
<th>1831</th>
<th>1832</th>
<th>1833</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>45</td>
<td>19</td>
<td>27</td>
</tr>
</tbody>
</table>

### Misdemeanors

<table>
<thead>
<tr>
<th>Year</th>
<th>1831</th>
<th>1832</th>
<th>1833</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>37</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

The total number of committals in each of the same years was 27, 26, and 33 respectively.
There were 159 persons charged with crimes at the assizes and sessions in Northumberland in 1838. Of these 18 were charged with offences against the person, 12 of which were common assaults; 19 were charged with offences against property committed with violence; 115 with offences against property committed without violence; only 1 was charged with a malicious offence; 5 for uttering counterfeit coin, and 1 for various misdemeanors. Of the whole number committed 130 were convicted, 22 were acquitted, 2 were not prosecuted, and no bill was found against 1. Of those convicted one was sentenced to death, whose sentence was commuted to transportation for 10 years; 24 were transported for various periods; 7 were sentenced to imprisonment for 2 years or above; 1; 29 for 1 year or above 6 months; and 65 for 6 months or under; 4 were fined. Of the whole number of offenders, 112 were males and 47 females; 44 could neither read nor write, 86 could read and write imperfectly, 24 could read and write well, 1 had received superior instruction, and the degree of instruction of the remaining 4 could not be ascertained.

The number of persons registered to vote for the county members in 1837 was 8756. Of these, 4907 were freeholders, 258 copyholders, 3195 occupying tenants, 14 trustees, 28 mortgagees, and 364 annuitants; being 1 in 25 of the whole population, and 1 in 6 of the male population 29 years of age and upwards, as taken in 1831.

Northumberland contains 6 savings' banks; the number of depositors and amount of deposits on the 20th of November in each of the following years, were as follows:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of depositors</th>
<th>Amount of deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1832</td>
<td>6097</td>
<td>£2,400</td>
</tr>
<tr>
<td>1833</td>
<td>6793</td>
<td>£2,400</td>
</tr>
<tr>
<td>1834</td>
<td>7267</td>
<td>£2,400</td>
</tr>
<tr>
<td>1835</td>
<td>7366</td>
<td>£2,400</td>
</tr>
</tbody>
</table>

The various sums placed in the savings' banks in 1836, 1837, and 1838, were distributed as under:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Class</th>
<th>Depositors</th>
<th>Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1836</td>
<td>8th</td>
<td>6732</td>
<td>£2,400</td>
</tr>
<tr>
<td>1837</td>
<td>7th</td>
<td>6732</td>
<td>£2,400</td>
</tr>
<tr>
<td>1838</td>
<td>6th</td>
<td>6732</td>
<td>£2,400</td>
</tr>
</tbody>
</table>

The schools established by dissenters, included in the above statement, are:—

<table>
<thead>
<tr>
<th>School</th>
<th>Description of Schools</th>
<th>Endowment,</th>
<th>Income,</th>
<th>Regular,</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant Schools</td>
<td>5</td>
<td>containing 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday Schools</td>
<td>5</td>
<td>containing 50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The schools established since 1818 are:—

<table>
<thead>
<tr>
<th>School</th>
<th>Description of Schools</th>
<th>Endowment,</th>
<th>Income,</th>
<th>Regular,</th>
</tr>
</thead>
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<tr>
<td>Infant Schools</td>
<td>5</td>
<td>containing 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday Schools</td>
<td>5</td>
<td>containing 50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Twenty-four boarding-schools are included in the number of daily-schools 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, such exclusion being declared in almost every instance. Especially in schools established by dissenters, whose titles are Wesleyan Methodists and Roman Catholics.

Lending libraries of books are attached to 57 schools in this county. There are—

**Northwich**, a town in the parish of Great Budworth, hundred of Northwich and county of Chester, 17 miles north-east by east from Chester, and 160 miles north-west from London, direct distance. It is situated on the banks of the Weaver, near the confluence of that river with the Dane, and its site extends over some parts of the neighbouring townships of Witton, Castle Northwich, Winsford, Marsdon, Leftwich, and Anderton, in addition to the township of Northwich. The high road from London to Liverpool passes through the town, and is there intersected by the road joining Manchester and Chester. The streets are irregular and badly paved, but lighted. Many of the houses are of considerable antiquity. The church is large, and chiefly remarkable for its semi-circular arches. According to Camden (Gough, ii. p. 492) the church was in the ancient Brittle Balti diu, or the black salt-pit. The salt-mines in the neighbourhood are very extensive, and have been worked since 1670, if not before.

Dr. Aikin, in his *Description of the Country From Miles Round Manchester*, London, 4to., 1725, a tradition of the inhabitants tending to prove that both the salt-mines and brine-springs were wrought during the occupation of Britain by the Romans. At the present time the productive power of these mines is supposed to be greater than that of any other mines in the world. The production of the rock-salt requires to be purified, by being dissolved in water, which is subsequently evaporated over hot furnaces, before it is fit for general use. Their annual production is about 30,000 tons of crude brine, which are usually mixed with salt taken from 90 to 120 ft. beneath the surface, and increased by about 45,000 tons. The total annual produce of the Cheshire salt-works is estimated at 75,000 tons, of which about 16,000 tons is consumed:—Great Britain: and the Vessels of 500 tons burden are constantly employed in transporting the salt, by means of its rivers Weaver and Mersey, to Liverpool. The reader will find much information relative to the salt-districts of Cheshire in the paper by Mr. Aikin, published in the first volume of the 'Transactions of the Geological Society,' and also on the gentleman's 'Survey of Cheshire,' drawn up for the Board Agriculture. The market-day is Friday; the fairs are on 10th April, 2nd August, and 5th December.
tion of the town, in 1831, was 1481. The free-grammar-

school spoke of in several topographical works under the head of Northwich, is the free-grammar-school at Witton, an adjoining township and the church above mentioned properly belongs. The school was founded in 1558, by Sir John Dayn, a parishioner of one of the St. Bar-
tholomews in London, and among other lands he gave unto it the Sarseon Head in the city of Chester. (Kingsvinger, 135.)

The river flows in fifteen indented, or, perhaps, also, said to be broken, between two towns, the.

Kingsvinger. which, as already mentioned, is the best cultivated portion of Norway. The Wormen-elf runs about twenty miles with a gentle current. The Drammen-elf originates on the eastern declivity of the Norska Fjords. The river issues in two branches, the British school, and discusses the lower half of the region,

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The mean temperature of North Cape is 39°, or the freezing point, but the winter is not more severe than at Trondhjem. The greatest cold at North Cape is felt when north-easterly winds blow, but the sea is always open, and the drift-ice from Spitzbergen does not approach the coast. The violence of the winds however renders this spot nearly uninhabitable. It greatly exceeds what is felt in other northern countries, and when the wind blows persons down to their knees dwelling; near to a stately tree, in the year are boisterous, and in autumn and winter the storms are incessant, and rage with incredible fury. On the approach of winter the snow-storms frequently last for many days and weeks. They are preceded by heavy fogs, which advance in tempests like impenetrable walls or moving bodies of water; but they occur only during westerly winds. The weather is fine and clear when the wind blows from the east. The longest day lasts from the 1st of May to the 29th of July, which is two months and a fortnight; the longest night, from the 19th of November to the 26th of January, which is two months and ten days. During the long nights the aurora borealis shines with uncommon brightness, so that the fishermen are enabled to go on their ordinary occupation as well as by daylight. (Von Buch.) Gales are very frequent along the whole of the western coast. Thunder-storms are as common there in winter as in summer, but north of 66° thunder-storms do not occur. No traces of volcanic action are known to exist, except that lava occurs on an island not far from Bergen, and on a mountain in the Bukke Fiord is said to appear sometimes. Earthquakes occur, though rarely.

The forests constitute the principal wealth of Norway. Beech occurs only south of 59° N. lat.; oak, elm and lime trees as far north as 65°; apples, cherries, and prunes are found as far as 64°, but they do not ripen every year. Gooseberries and hazel-nuts extend to 65° N. lat. whit, and so far oats, peas, beans, and rye are cultivated. Hemp and rye are grown to 66° N. lat. and the same spruce fir reach this point. Pines grow as far as 67° N. lat., but north of 67° only birch and juniper grow, and only barley and potatoes are cultivated. Extensive forests of fir and pine cover the eastern declivity of the Norway Fiellens, and a great part of the hilly and rocky country east of the range; and it is from these regions that the greatest part of the timber is brought to the sea. On the lower coast along the Bay of Trondhjem, and in the valley of the river Nam- sen, there are also extensive beech and pine. The railings and agriculture is not neglected, the produce of the crops is not sufficient for home consumption.

Cattle and goats are numerous, but sheep are rare. The horses are of a small size in the southern districts, but larger to the north of Trondhjem: they are strong and hardy. Bears, wolves, foxes, gluttons, ermines, as well as rein-deer, elk, deer, and hares, abound. The lemming exists in great numbers, and in its migration destroys every plant in its way. (P. 501.) Mammals of the marine class seem to abound along the northern coasts, and their eggs constitute the principal food of the inhabitants of some districts during a part of the year; but they are only procured at the risk of life, for the sides of the ice are numerous, and the feathers of the guil are of great value for bedding. A small quantity of them are exported. The sea furnishes the principal means of subsistence to the inhabitants of the western coasts; cod and herrings are most abundant, and this fishery gives occupa-

tion to many families. [BERGEN.] Salmon abound, and is finer than in any other country in the world. Lobsters are found in the greatest abundance on both sides of Cape Lindesena, between Hellesand east of Christiansand and Lister Fiord north-west of Lindesena. They are sent to the London market. [Norway.] As to the mineral products, see Nosi-Berns. Salt is made from seawater at some places along the Skager-rack, but not in sufficient quantity to be of any importance.

Inhabitants.—The Norwegians, like their neighbours the Danes and Swedes, are of Teutonic origin, and speak a language which differs very little from the Swedish. It is supposed that the language of the Norwegians has undergone some changes from that of their neighbours. In the lowland districts, north of 69°, there are many families of Finlanders and Laplanders: the former are here called Quins, and the latter Finners or Finlanders. The Quins cultivate barley, potatoes, and pasture cattle. The Finners are mostly fishermen, except a certain number of farmers who live on their herds of rein-deer. In winter they go to Sweden.

Political Division; Population; Manufactures; Commerce; Navigation.—Norway was from an early period divided into four bishoprics: Christiania, Christiania-Bergen, and Trondhjem; and afterwards, under the Danish dominion, the civil administration of the country was regulated in agreement with the ecclesiastical establishment; a civil governor, called Stiftshauptmann, being appointed for each bishopric. In the 16th century Trondhjem has been divided into two, Trondhjem and Nordre Trondhjem, and continue to constitute one civil administration. Norway is subdivided into seventeen bailifrics or districts, the usual and relative population of which appears in the following table, which is formed from that which is given in Fersman's "Statistik von Schweden".

<table>
<thead>
<tr>
<th>Names of the Districts</th>
<th>Area in English square miles</th>
<th>Population in each division.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smaalalandes</td>
<td>1,625</td>
<td>62,931</td>
</tr>
<tr>
<td>Aggerhus</td>
<td>2,028</td>
<td>90,216</td>
</tr>
<tr>
<td>Holmarken</td>
<td>10,476</td>
<td>77,929</td>
</tr>
<tr>
<td>Christians</td>
<td>18,267</td>
<td>96,309</td>
</tr>
<tr>
<td>Brakerudet</td>
<td>5,336</td>
<td>74,697</td>
</tr>
<tr>
<td>Iarsberg and Laurvigs</td>
<td>943</td>
<td>44,154</td>
</tr>
<tr>
<td>Bradsbergs</td>
<td>6,121</td>
<td>63,139</td>
</tr>
<tr>
<td>Nedensæ</td>
<td>4,893</td>
<td>45,842</td>
</tr>
<tr>
<td>Mandals</td>
<td>3,247</td>
<td>34,232</td>
</tr>
<tr>
<td>Stavanger</td>
<td>4,672</td>
<td>65,179</td>
</tr>
<tr>
<td>Sondre Bergenhuse</td>
<td>6,918</td>
<td>104,471</td>
</tr>
<tr>
<td>Nordre Bergenhuse</td>
<td>8,573</td>
<td>69,778</td>
</tr>
<tr>
<td>Romdals</td>
<td>6,532</td>
<td>17,104</td>
</tr>
<tr>
<td>Sondre Trondhjem</td>
<td>7,808</td>
<td>77,310</td>
</tr>
<tr>
<td>Nordre Trondhjem</td>
<td>9,541</td>
<td>57,707</td>
</tr>
<tr>
<td>Nordrlands</td>
<td>3,330</td>
<td>57,707</td>
</tr>
<tr>
<td>Finnmarken</td>
<td>30,236</td>
<td>33,391</td>
</tr>
</tbody>
</table>

134,039 1,150,000

Of this population only 124,817 individuals live in towns, and 1,026,083 are dispersed over the country. Perhaps less than half the population gain their subsistence chiefly in cultivating the ground. The remainder employ themselves chiefly in the fishing of cod, herring, salmon, and lobsters, in preparing the produce of its forest for the market, and in working the mines. The manufacture of salmon is comparatively very small. The most numerous manufacturing establishments are saw-mills, the erection of which is pursued by the rapid course of the numerous rivers, even near the sea-shore, for house-building, and copper works, potash-houses, glass-houses, powder-works, salt-forges, and two salt manufactories. Linens and copper woolen cloths are made by the country-people for home consumption. In Christmas and Trondhjem there are copper manufactories of cloth, cotton, and tobacco; there are also a few sugar-houses and tanneries.

The foreign commerce is considerable, as the greatest part of the produce of the forests, the fisheries, and mines are sent out of the country. The town goes almost exclusively to Great Britain, and consists of planks, deed, and other lines of excellent quality, and also tar, which lately fire-wood has been added as an important article. The produce of the fishery goes partly to Spain and the Mediterranean, which places the cod is sent in, partly to Asia and parts of the Baltic, where the herrings find a ready sale, and parts of England, especially the lobsters, which, as already observed,
are sent to the London market. Iron is not exported, there being hardly sufficient for home consumption; but copper is. Exportation of the bill, it is said, has been stopped by the legislative bodies, it is sent to the king, whose signature gives it the force of law. If the king does not assent, he sends the bill back, observing only that he does not think it useful. In this case the matter cannot be discussed in the following session; and the king may pass the same bill, and the king has a right to reject it a second time: but if the third Storting pass the bill, it becomes a law, whether the king sign it or not. The law by which a bill is rejected by the king has passed after having passed in three Stortings. The Storting meets once in three years, on the 1st February, and the session cannot last more than three months. The members are only chosen for one Storting. The king may in the interval convocate extra sessions to decide on the persons who were members of the last regular Storting.

The executive power is vested in the king. The Storting does not interfere in any way with his arrangement of the department of war. But before the king declares war he must inform the council of state at Christiania of such proposed step. This council is composed of a minister of state, seven state councillors, and a secretary of state, all of whom must be natives of Norway. When the king is not in Norway, the minister and two of the councillors are with him, and they convene with the governor, who must not be a Norwegian, but may be a royal prince, in which case he is called viceregent. When the king has informed the Norwegian and Swedish councillors of his intention to declare war, the Norwegian and Swedish councillors of state, explains to them the motives which compel him to take such a step, and asks their opinion. The opinion of each member is taken down in writing, and the decision of the matter is left to the king.

The Storting may examine the proceedings of the council of state, and, if there is reason for it, bring it or any member of the body to a trial. The Tagting, united with the supreme court of justice residing at Christiania, constitutes the court of cassation.

Von Buch's Travels through Norway and Lapland; Everest's Journey to Norway, Lapland, and part of Sweden; Laing's Journal of a Residence in Norway; Schubert's Reise durch Schweden, Norwegen, Lappland, Finnland und Ingermanland; Forsell's Statistik von Schweden.

NORWICH, a city and county of itself, in the county of Norfolk, of which county it is the capital: 97 miles north-east of London, in a direct line; 118 miles by the mail-road through Norwich Market, Bungay, and Ipswich; and 113 miles by the other mail-road through Chelmsford, Colchester, and Ipswich. It is in 52° 7' N. lat., and 1° 16' E. long.

Norwich is not mentioned in history before the time of the earlier Danish invasions. It appears to have risen gradually from the decay of Caister or Castor St. Edmund's, now an insignificant village about three miles south of Norwich, but antiently a British and subsequently a Roman town under the name of Veneta Iconorum. An old distich records that

was a city when Norwich was none,
And Norwich was built of Castor stone.

It is probable indeed that during the time of the Romans the site of Norwich was covered by the waters of the estuary or arm of the sea which at that time penetrated with its many ramifications the eastern coast of the island, and extended to the sea, it is likely, to or beyond the town of Yenta. [Norfolk.] By the gradual accumulation of alluvial soil, these waters were formed in this estuary, and its waters were divided into several channels. It is probable that even as late as the period of the Norman conquest what is now the lower part of the city consisted of such islands. During the existence of the separate kingdom of Anglia [Norfolk], their kings had erected, upon what was then a promontory on the shore of this estuary and is now the Castle Hill, a royal fortress; and as it is probable that by this time the branch of the estuary which flowed up to this hill either was not then navigable, or was not, or was little available for navigation, the merchants and fishermen deserted Yenta to seek new abodes under the protection of the castle, and thus formed a town which, from its situation relative to their former town, obtained the name of North-nor Wich (wic, in Latin vicus, a habitation, or group
of habitations), the northern station or town. Norwich became a place of some importance under the Anglo-Saxon princes, and had a mint of its own at Stoneleigh, Henry of Norwich, vol. ii., p. 4, notices the coins of several Saxon princes. Alfred, Athelstan, Edmund I., Edred, Edward the Martyr, and Ethelred II. The circumstance of Alfred coining money here is remarkable, as at the date of this coinage (about the time of the Norman Conquest) the government of East Anglia could only have just come into his hands, upon the extinction of the East Anglian dynasty in the person of St. Edmund, and the country either was or had just been in the military possession of the Danes. 

The church of St. Edmund, Bishop's Palace, and the town of Ipswich, and the Church of St. Edmund, Bishop's Palace, and the town of Ipswich, were rebuilt, and the churches and other public buildings were very considerably improved, and the whole town was greatly enlarged and beautified.

In the civil war of Charles I. Norwich added to the parliament; and as the king had no party in this district, a contest took place. No public event of interest has occurred since that period.

The castle of the city of Norwich extends about four miles from north to south, and as many from east to west, the town itself is not exactly in the centre of this district, but rather to the north-east, and extends about a mile and a half in length from north to south, and from two to three miles from west to east. The town consists of several parts, which are generally spoken of as a city, a town, and a suburb; but the whole city may be considered as one continuous town. The north-western part of the city is the most populous, and contains the most public buildings, and is the most ancient part. The south-eastern part is the most modern, and contains the most elegant and spacious public buildings. The north-eastern part is the most extensive, and contains the most public and religious buildings. The south-western part is the most uneven and irregular, and contains the most public and religious buildings. The west side of the city is the most populous, and contains the most public and religious buildings.

The market-place is one of the most spacious in England. The streets are paved, lighted with gas, and watched under the provisions of a local act, and the principal streets have flagged footpaths. Many of the houses are inhabited by clergymen, and the inhabitants are divided into different classes, consisting of a small number of rich merchants, and a large number of poor labourers. The streets are narrow and winding; some of them follow the line of the ancient walls, which are partly standing, though the ditches have been filled up, and the turrets and battlements of the walls remain in a very dilapidated condition; in other parts they have been entirely demolished and the site built upon. The town stands on a considerable space of ground for its population, the houses being mostly determined with gardens, so that it has been described as a "city in an orchard."
comprehended two floors, a basement 24 feet high, with walls 15 feet thick, faced with flint, and almost destitute of ornaments. The upper part is faced externally with stone, and is much ornamented. The building maintains its ancient form externally, but the architectural ornaments are much impaired by time: the inner part has been much altered. The excellent church-tapewindmill constitutes a good, to which it has been long applied, that the original arrangement of the apartments can scarcely be traced.

The entrance tower, of richly ornamented Norman architecture, is one of Bigod's Tower, has lately been restored. The lower end of the nave, the lower end of the south side of the church, and the west end of the nave and the area under the tower, an unoccupied space east of the choir, a chancel with two side-aisles continued round the circular east end of the choir, several chapels, a tower and spire at the intersection of the transept and the south side of the church. The length of the whole building from east to west is 411 feet; the breadth at the transepts 191 feet; the breadth of the nave and side-aisles is 71 feet. The cloisters, with the included space, form a quadrangle with the nave and side aisles, and are 176 feet each. The height of the tower and spire, with the weathercock, is 313 feet. The plan is almost wholly Norman; the east end and some of the chapels are circular. Compared with other cathedrals, that of Norwich is small in size and magnificent in condition; but it comprises many forms and features of singular and unique character. There has been a lady-chapel eastward, but it is now destroyed. The exterior of the cathedral in many parts presents a rich and pensive aspect, and is a character of the stone of which it was built; and buildings or other incumbrances prevent it from being seen to advantage on any side except the west. The nave, central tower, and eastern portion present a continued line of nave and aisles along the middle of the nave, and are of very fine composition: in its aisles are some good Norman groined roofs; and the tower, both inside and outside, presents one of the best specimens of ornamented Norman extant. The architecture of the nave is very bold, and the arches of the triforium are very large. There are various insertions of later styles: the destroyed lady-chapel was of early English; the spire is of decorated English or early perpendicular; the cloisters present a series of work early decorated to perpendicular, and a considerable portion of the west front from the cloister cloister is the greatest and finest, and various portions of the screen-work and several of the monuments deserve attention. The chapter-house has been destroyed. There is a good doorway, and some large octagonal columns in the cloister.

On the north side of the cathedral and connected with it is the episcopal palace, a large and irregular edifice, built by different prelates; there are in the garden some remains of the antient hall of the palace, now in ruins. Near the west end of the cathedral, and adjoining the chapter-house, containing some good ancient work; and not far off are two antient gates, St. Ethelbert's Gate, of decorated English character, and the Erpingham Gate, of late perpendicular; both valuable specimens of their respective styles.

The parish churches of Norwich are more numerous than in any other city in England except the metropolis; they amount to thirty-six. Some of them are valuable specimens of ancient architecture. Those of St. Benet, St. Ethelred, and St. Julian have round towers: these towers are usually considered to be of early Norman date, but their original openings have been so distantly preserved by alteration, that the Gothic style cannot be exactly ascertained. Several of the other churches retain portions of good antient work amidst much mutilation and addition. The church of St. Michael Colney, with excellent thirteenth-century work in the English and part of perpendicular character; in the latter the four north and south windows and other embellishments are carved in stone, and the interstices filled up with flints. The churches of St. Andrew, St. George Colegate, St. Giles, St. John Sepulchre, St. Lawrence, St. Michael at Pile, and St. Peter are somewhat similar, but the most curious church is that of St. Peter Mancroft, a large and fine perpendicular church, with a lofty tower and windows some feet above the top of the tower. Some windows are the remains of ecclesiastical edifices. The nave of the church belonging to the monastery of the Dominican or Black Friars is now the common hall of the city, called St. Andrew's Hall; the choir, long used as the Dutch or Lothian church, with the under kitchens, dormitory, infirmary, and other parts, were lately used as a workhouse.

St. Giles's Hospital (popularly the Old Man's Hospital) comprehends portions of the antient church of St. Helen's. There are numerous dissenting places of worship.

The Guildhall stands, it is said, on the site of the palace of the fifteenth or sixteenth century, and since repaired or altered; it includes convenient courts for holding the city assizes and sessions, and contains some good paintings and some other objects of interest. The great hall is of one story, but is considered to be the remains of a Benedictine monastery at the same time as those of the cathedral; the monks of this monastery were engaged in frequent contests with the citizens, and in these conflicts the cathedral consideration was once involved. The hall was completed in 1101: its revenues at the dissolution were 1550l. 17s. 6d. gross, or 978l. 19s. 4d. clear. A few traces of the buildings remain.

The following are the number of the population of the county of the city of Norwich in the course of the present century:—1801, 36,832; 1811, 37,256; 1821, 50,288; 1831, 61,118. The population in 1831 comprised 529 families, chiefly engaged in agriculture, 9153 in trade and manufactures, 554 in miscellaneous occupations, and 458 in the above classes. The number of houses in 1835 was 14,201, of which 13,132 were inhabited and 1069 uninhabited. The number of houses rated to the poor was 4523, of which 1271 were rated under 10l. a year; 1978, 10l. and 60l.; 678 above 200l. and under 40l.; and 508 at 40l. and upward. The most important trade of the town consists of the manufacture of silk and worsted into shawls, crapes, bombazines, damasks, camlets, and imitations of the Irish and French stuffs. The city is, besides, celebrated by the manufacture on hand-loom and at the habitations of the workmen. There are however some manufactory. These branches of industry have recovered from the depression under which they had long laboured (of which depression the town has a distinct experience), and are not only rapidly increasing, but engaged in them in 1831. There are three yearly fairs, and two weekly markets, viz. on Wednesday and Saturday; the latter, which is the principal, is a great market for corn and cattle. The corn-market is held in a large handsome building, "the Corn Exchange," erected for the purpose, and the cattle-market is in an open area adjacent to the castle. Trade in agricultural produce, coal, and other heavy goods is carried on by means of the river, chiefly in lighters from fifteen to twenty tons burden. Since the 30th September, 1833, Norwich has been accessible to sea-borne vessels of small tonnage. To facilitate the approach, an entrance has been made from the sea into the navigable channel of the Waveney, by Lake Lothing, and a ship-channel from the Waveney to Great Yarmouth, Lord Nelson, and under Breydon. There is another short canal near Norwich. These various cuts with the river are navigable for vessels not exceeding ten feet draught of water. The harbour, lock, and sluice at the sea entrance of this navigation are extensive and commodious. The assize courts, and quarter-sessions for the county or Norfolk are held at Norwich.

Norwich claims to be a borough of prescriptive origin. The corporation has however received many charters from successive kings. Before the late Municipal Reform Act it comprehended a governor, a mayor, two consuls, fifteen aldermen, and 60 common councilmen, with the usual officers, and nearly 3500 free men. By the Municipal Reform Act the borough was divided into eight wards, and has 16 aldermen and 48 councillors. Vol. XIX. p. 1018.
NORWICH, AMERICANA.

NORWOOD, RICHARD, a mathematician of the earlier part of the seventeenth century, of whose personal history we know nothing. He is principally famous for having been one of the first who measured a degree of the meridian with any accuracy. His method was this: in the year 1635 he measured the distance between London and York, taking the bearings as he proceeded along the road, and reducing all to the direction of the meridian and to the horizontal plane. The difference of latitude was to be 2° 55', and from this and his measured distance he concluded the degree to be 367,176 feet English, or 57,800 toises. This has been found to be a near approximation, but his method was superseded by the modern geographical and astronomical methods of determining the distance in the best manner. 'Sometimes,' says he, 'I measured, sometimes I paced, and I believe I am true, a scathing of the truth.' He is the author of the following works:—1. 'Trigonometry,' or the Doctrine of Triangles (in two parts), London, 1633, 1631, and 1636. 2. 'The Elements of Geography, or Architecture Militaire,' 4to. 1639. 3. 'The Seaman's Practice, containing the Mensuration of a Degree of the Earth,' 4to. 1637, 1635, 1667, 1668, 1676, 1678. 4. 'Epitome of the Application of the Doctrine of Triangles to several Problems of Sea-Manship.' The New Edition, 4to. 1674. 6. 'Logarithmic Tables,' 12mo, n. d. He also published letters and papers, in the Philosophical Transactions, on the tide, on his mensuration of an arc of the meridian, and on other subjects of minor importance.

NORWICH, one of the chief cities of the eastern part of the kingdom, is known as a city, with suburbs, and the county seat of Norfolk. The two members of parliament from the time of Edward I. The constituency in 1835-36 comprehended 4102 electors, freemen or 101-householders. The limits of the borough, including the parliamentary and parochial counties, extended beyond the county of the city, and have been no further altered than by the addition of some extra-parochial districts within the boundary. Norwich is the principal place of election and a polling-station for the eastern division of the county of Norfolk. The benefits in the city amount to thirty-four; they are, with one exception, in the archeaconry of Norwich, and are all small, only two exceeding 200£ yearly value; a workhouse is provided with. There were in 1832, in the county of the city, thirty-eight infant or dame schools, with above 900 children; twelve board schools, with above 300 children; and one hundred and twenty day-schools of all kinds (including national and other charity schools), with 4200 scholars; giving in all one hundred and seventy schools, with about 6400 children in them, or about one-tenth of the population of the county of the city at the time. There were forty-four Sunday-schools of all classes, giving instruction to about 4400 children.

There are several dissenting places of worship. The charitable institutions and charities are very numerous. (Reports of Charity Commissioners.) The Norfolk and Norwich Hospital, a large and elegant building of red brick, erected in 1771, can receive above a hundred patients. It is protected by the almshouse or by a charity founded by St. Andrew's Hall. The Norfolk and Norwich Lunatic Asylum is at Thorpe, about two miles from the city. There is a dispensary, an eye-infirmary, a lunatic hospital, an asylum for foundlings, an orphan asylum, a workhouse for the indigent: St. Giles's hospital, the Boys' and Girls' hospitals, and Doughty's hospital are the chief of these. St. Giles's hospital (of which the management is in the corporation) has estates worth nearly 6000£ a year. There are a maternity and 166 immediate living of the free grammar-school is maintained out of this endowment.

Of institutions for the promotion of knowledge, the Norfolk and Norwich Literary Institution is the chief. It has a valuable well-selected library, for which a fine new building was erected in 1799 on the site of the county museum. The Norwich Museum is kept in the building connected with this institution, but is an entirely separate establishment. There is an annual exhibition of paintings by a society of artists. There are two newspapers published at Norwich. The Norwich Union Fire and Life Insurance Offices are institutions of considerable importance.

(Rickman's Gothic Architecture; General History of the County of Norfolk, Norwich, 1855; Stark and Robbards' Seer of Norwich; Revere's of Norwich; Briton's Norwich Cathedral and Architectural Antiquities; Parliamentary Papers.)

NORWICH, DIOCESE OF. Upon the establishment of Christianity among the East Angles, in the reign of Sigericus, St. Edmund's, (now by figures, 477,) was an establishment, on the site of the church and the site of the bishop of the newly-converted people, and the site was fixed at Dunmow or Dunmok, now Dunwich, then an important town, and perhaps the residence of the king. The limits of the diocese appear to have been those of the kingdom; and these may be considered as on the whole indicated by those of the present diocese, making some allowance for the variation which may be supposed to have taken place in the course of many centuries. The subsequent changes of the diocese are noticed elsewhere. (Norfolk.)

The diocese of the counties of Norfolk and Suffolk, except four parishes in the latter county, viz. Hadleigh, Monks Ilheigh, and Moulton, peculiar of Canterbury, and Freckingham, a peculiar of Rochester; it comprehends also the archdeaconry of the county which appear to have belonged to the East Anglian kingdom, while the rest of that county belonged to Mercia, and is now included in the diocese of Ely.

There was formerly but one archdeaconry for the whole diocese; now four, as the counties—Norwich (original one), Norfolk (established A.D. 1290), Sudbury (A.D. 1126), and Suffolk (A.D. 1127). These four comprehend 46 rural deaneries and 1356 parishes.

It is proposed by the Church Commissioners (Third Report) to transfer the Cambriagede diocese, with the deanery of Fincham, in the archdeaconry and county of Norfolk, the deanery of Lynn, in the archdeaconry of Norwich, and county of Norfolk, and the deaneries of Fordham, Clare, and Thingo, in the archdeaconry of Sudbury and counties of Cambridgeshire and Suffolk, to the diocese of Ely. The revenues of the bishopric were formed by a grant made by Henry VIII. The net yearly income of the see was, in 1631, 5392£. No alteration has been proposed in the income. The bishops have always possessed greater liberties than any other prelates in England, and, though the see is not in the line of right of their barony, but also as titular abbeys ofSt. Bennet in Holme. The bishop of Norwich is the abbot in England.

The corporation of the cathedral consists of a dean and three prebendaries; there are also six minor canons (three of whom hold respectively the offices of prebendar, sacrist, and librarian), a usher, and an usher. The see revenues of the church, in 1831, were 6244£, of which the greater part was shared among the dean and prebendaries.
stances which are of the greatest importance to its own existence, and thus obtains at once knowledge of the presence in places concealed from all the other senses. Man possesses the sense of smell for a very large number of substances, but not in a very acute degree for any of them. The differences appear the greater between him and other animals in some of the more delicate of the exercise of this sense which is common (except for particular purposes) in civilised society; but the American Indians and some of the northern Asiatic tribes, by their constant practice in hunting, are said to have acquired a power of distinguishing the smell of animals and the mark of their tracks into all the form of quadrants, and then arranged them in three Centuries. When this was done, he was in some doubt about the safety and propriety of publishing the results of the events foretold in his predictions was near at hand, for he at last persuaded to print them. The first edition was published at Lyon (1555), and appeared with a dedication to his son Caesar, then an infant. As might be expected, the work was very differently received by different persons; at home he was generally considered an impostor, but in other parts of France he was looked upon either as a person really and truly inspired by God, or else as one who held communication with the devil. However Henry II. and his superstitious mother Catherine were pleased for him to publish his predictions, and made him a present of two hundred crowns, and sent him to Blois to see the king's children there, and to try to find out their future destinies. The result of this visit is not known, but it is certain that Nostradamus returned to Avignon with a generous load with which he might have provided himself, for his continued practice made him a present of two hundred crowns, and a new edition of them, with a dedication to the king, in 1558. The next year that he received a wife, who had been a nun, and it was thought that so unusual an accident could not have been omitted in Nostradamus's predictions; accordingly his book was immediately consulted, and in the thirty-fifth quinarian of the first century were found the following lines:—

"Le lien jaune le very surmontee.  
En champ bellique par singullier duel 
Dame cage bor le yeeul fut crever. 
Deux pluisuse, jouis mortim; mort euile.*"

So remarkable a coincidence greatly increased his fame, and he was honoured shortly after with a visit from Emmanuel duke of Savoy, and his wife the princess Margaret of France. Charles IX. on a progress through Provence, sent for him, and upon his complaining of the slight respect in which he was held by his fellow-townsmen, publicly declared that as far as his name was concerned he should hold the same position as the king himself. He afterwards presented him with a purse of two hundred crowns, together with a brevet constituting him his physician in ordinary, with the same appointment as the real attention to his predictions was near at hand, for he at last persuaded to print them. The first edition was published at Lyon (1555), and appeared with a dedication to his son Caesar, then an infant. As might be expected, the work was very differently received by different persons; at home he was generally considered an impostor, but in other parts of France he was looked upon either as a person really and truly inspired by God, or else as one who held communication with the devil. However Henry II. and his superstitious mother Catherine were pleased for him to publish his predictions, and made him a present of two hundred crowns, and sent him to Blois to see the king's children there, and to try to find out their future destinies. The result of this visit is not known, but it is certain that Nostradamus returned to Avignon with a generous load with which he might have provided himself, for his continued practice made him a present of two hundred crowns, and a new edition of them, with a dedication to the king, in 1558. The next year that he received a wife, who had been a nun, and it was thought that so unusual an accident could not have been omitted in Nostradamus's predictions; accordingly his book was immediately consulted, and in the thirty-fifth quinarian of the first century were found the following lines:—

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9. enfin, la Conquête que ce Héra doit faire de l'Angleterre. ... The (so called) prediction of the death of Charles I., mentioned in the above title-page, is one of the most singular in the whole collection; it occurs in the forty-ninth quatraine of the ninth century, and is as follows:—

* Gaul et Bretonne marquent contre Anvers; 
* Quique mortis mittit à low Roé; 
* Le sel et le vin lui seront à l'œuvre; 
* Ainsi le réve au droit.

In the dedication of his work to Henry II. he predicts that the Christian church will suffer from a cruel persecution:

* et durera ceste cy jusques à l'an mille sept cent nonante deux, que l'on eudiera estre une renovation de siècle;* the latter part of this sentence is certainly remarkable when we recollect the particular republicanism and pauperism which existed in France after the 29th of December, 1572; and that in all public acts time was reckoned from that day as from the commencement of a new era.

The 'Centuries' of Nostradamus have been frequently reprinted, and numerous commentators have endeavoured to explain his predictions. The best editions are those of Lyon, 1568, 8vo., and Amsterdam, 1668, 12mo. Of Commentaries (besides that of M. Bouys, already noticed) the most celebrated are:—

* Commentaire sur les Centuries de Nostradamus,* par Chavigny, Paris, 1596, 8vo.; * Concordances des Centuries de Nostradamus avec l'Histoire,* par Guynaud, Paris, 1693, 12mo.; *La Clef de Nostradamus,* par un Solitaire, Paris, 1716, 12mo., and an English translation, with notes, by Theophilus de Garenckes, Lond., fol. 1672.

Before he left, his 'Centuries' were published in several years an almanac, containing predictions about the weather, &c., besides a few other works of which only the names are now remembered: *Tracté des Fardemens,* Lyon, 1552; *Des Contrefêtes,* Anvers, 1557; both continued in *Opuscule de plusieurs esquisses Receptes divisez en deux parties,* Lyon, 1572, 16mo.; *Le Remede tres utile contre la Peste et toutes Fièvres pestilentielles,* Paris, 1561, 8vo.; *Paraphrase de Galien,* sur l'Exhortation de Ménodote aux Etudes des Beaux Arts, Lyon, 1588, 8vo. 

But for many years the whole work of Nostradamus has seen *Abrégé de la Vie de Michel Nostradamus,* par Palamède Trone de Condroulet, de la Ville de Salon, 4to, no date; *his Life,* by Haite, Aix, 1712, 12mo. Adelung has given him a place in his *Histoire de la Folie Humaine,* vol. 103.

This article cannot better end than with the famous Latin distich composed on his name, which has been attributed to Jodelle and to Beza:—

* Nostra damus, eam fides damus, nam fides nostrum est; 
* Larum nomen, illi nomen alium.

NOTAM'IA. Dr. Fleming gives this name to a group of the great genus Sertularia of Linnæus. [C.ELLARICAE.] NOTARY. This word is derived from the Roman name notarius, a public officer, whose duties were included in those of writing (not) the words of a speaker. The notarii were in fact short-hand writers, and it is clear from many passages of ancient writers that they used symbols of abbreviation. It may be sufficient to quote the two following passages:—

* Il est scriptor est foilt et litera verbum est; 
* Quaestis male linguis, superstes cursumque bofast, 
* Exquisita longa pars per compendia voces*; 
* Mensula. Astraeas.*

* Current verba licet, manus est velocior illis, 
* Nodum linguis sumum, dextra perigit optum. *

It seems that they were also employed to take down a man's will in writing. The notarii were often slaves. The word is also sometimes used to designate a secretary to the princes or emperor. ([Ausonius, Epig., 136; Gregor. Maj., lib. A., *De Doctrina Christiana*; Dig., 29, tit. 1, sec. 40; Lampridius, Alex. Sev., 28; see also the references in Facciolatti, Notarius).)

In the fourth century, the notarii were called Exsectsors, and were employed by the governors of the Roman provinces to draw up public documents. But the persons mentioned under the later Roman law, who corresponded most nearly to the modern notary, are called tabelliones; their business was generally to draw up contracts, wills, and other important instruments. The forty-fourth Novel treats specially of the tabelliones (συμ τών των συμβολαρίων); and they are spoken of in various other parts of the Novels, and in the Code. (Cod. xi., tit. 53, &c.) It appears clear that as the word notarius is the origin of the modern term notary, so

the tabellio is the person from whom were derived the functions of the modern notary public. It is impossible to say when persons under the name and exercising the functions of notaries were first known in England. Spelman cites some charters of Edward the Confessor, in which he is executed for sealing the king's chancellor's rolls. (Gloss. tit. Notarius.) *Notaries* are mentioned under *practitioners, attorneys, executors, and maintainours,* in the stat. of 27 Edward III., c. 1. They were officers or ministers of the ecclesiastical courts, and may therefore have been introduced into this country at a very early period. It is supposed that the power of admitting notaries to practice was vested in the archbishop of Canterbury by the 11 Hen. VIII., c. 21, s. 4. The term of service and the manner of admission to practice are now regulated by the 44 Geo. III., c. 12, which prescribe that no person in England shall act as a public notary or do any notarial act unless he is duly sworn, admitted, and enrolled. He must also have been bound by contract in writing, or by indenture, to serve a certain number of years for a public notary, or to a scrivener using his art and mystery according to the privileges and customs of the city of London, and also being a notary, who has been duly sworn, admitted, and enrolled, the execution of the contract must also be made and filed, as the act prescribes, in the proper court, and the affidavit must be produced and read at the time of the person's admission and enrolment as a public notary, in the Court of Faculties. The statutes are the present law regulating rolling notaries. The proper persons for taking and filing the affidavits are the master of the faculties of the archbishop of Canterbury, in London, his surrogates or commissioners. Persons who act as notaries for reward, without being properly admitted and enrolled, are, by this act, liable to be imprisoned, to forfeit and pay the sum of 50l.; but British consuls abroad are empowered to perform notarial acts (44 Geo. IV., c. 87, s. 29). The licence or commission for acting as a notary in England requires a stamp duty of 36l. and an enrolment of one of 20l., and is also the same as for attorneys. By the 3rd and 4th William IV., c. 70, the provisions of the act of 41st Geo. III., so far as relates to the apprenticeship for seven years, are confined to the city of London and liberties of Westminster, the borough of Southwark, and the circuit of twenty miles from the Royal Exchange in the city of London; and the master of the Court of Faculties of the archbishop of Canterbury is empowered to appoint, admit, and cause to be sworn and enrolled in due course of time, any notaries or attorneys, and notaries or attorneys, not residing within the above-mentioned limits, to act as public, to practise within any district in which the master of the faculties shall see good reason for making such appointment. Notaries public who practise within the jurisdiction of the incorporated company also become members of and take their freedom of that company under the act of the 41st Geo. III.

The original business of notaries was to make all kinds of legal instruments; they are often spoken of in former times as the persons who made wills (Shepherd's Touchstone, vol. ii., 407, Preston's ed.); but the attorney, solicitor, and conveyancer have now got possession of this part of their business. In practice their business is now limited to the attestation of deeds and writings for the purpose of making them authentic, or other court proceedings, but principally such as relate to mercantile transactions. It is also their business to make protests of bills of exchange. They also receive and take the affidavits of mariners and masters of vessels. The notaries are mentioned, with other court officials, as attorneys, solicitors, attorneys, and others (44th Geo. III., c. 98, s. 13), as the persons who may, for fee or reward, draw or prepare conveyances or deeds relating to real or personal estate, or proceedings in law or equity. A recent act (44th and 45th Geo. IV., c. 70) restates, with some modifications, the same sections, except such as relate to probate. Notaries, who are allowed by this act to perform such acts as were formerly committed to the Court of Chancery, and to such declarations. The courts, when certified under their signature and seal, and transmitted, shall be admitted in all such actions and suits to have the same force as if the person making the declarations had appeared and sworn or affirmed the matters therein contained in open court, or
NOT

upon a commission issued for the examination of wit-nesses.

NOTARCHUS. [Tetrachordalita.]

NOTATION. [Symbols.]

NOTATION, in Music, signifies the method whereby the pitch, or tune, and duration of musical sounds are represented, and by which definite periods of silence, called rests, are marked: it is a music what letters and punctua-tion are to language.

To show the pitch, the Greeks used the letters of their alphabet, placed in various positions. [Music, p. 24.]

The same manner has been due to the majuscules of their own alphabet for the same purpose, till the latter part of the sixth century, when St. Gregory, or Pope Gregory I., employed the seven first capital Roman letters for the first septenary, beginning with the answering to the lowest space, namely, and greatly to the perplexity of the present used the corresponding small letters; and the third he denoted by the same small letters doubled. Example, explained in modern notation:—

\[
\begin{align*}
A & \quad E & \quad D & \quad F & \quad G & \quad B & \quad C & \quad i \\
\end{align*}
\]

Guido, early in the eleventh century, introduced, it is commonly supposed, the use of points instead of letters, which he placed on parallel lines, giving names to the latter by means of letters, which have since been gradually transformed into those still called clefs. [Guido Clef.]

The dots however of Guido only marked the degrees of high and low; to Franco of Cologne we are indebted for characters which at once denoted both the tune and time of the sounds. [Music, page 25.]

Of these he invented four, and their rests; namely, the

\[
\begin{align*}
\text{Largo,} & \quad \text{Longo,} & \quad \text{Breve,} & \quad \text{Semibreve.} \\
\text{Rests, or marks of silence.} & \\
\end{align*}
\]

These were valued or measured by the semibreve. The breve was equal to two semibreves, the long to four, and the large to eight. [Long, &c.]

The invention of the Minim, Crotchet, Quaver, and Semiquaver, is ascribed to John de Muris, a doctor of the Sorbonne, who made this important addition to the same personage, that is to say, as is supposed, by the invention of the signs of which these were the prototypes. [Music, p. 25.]

The last two of these characters were the only ones which had been universally acknowledged, and which have continued in use down to our own times, and which are called clefs. In the year 1338 the Semiquaver first appeared in the seventeenth century, and, about the middle of the last, was divided into halves. Laterly it has been subdivided into quarters, and even into eighths, nay into sixteenths, and, finally, into thirty-second notes. But even so the musical notation continued to depend on the instrumental performance, and, consequently, to the detriment of the art, by wantonness, and with an affectation at once vulgar and mischievous, throwing difficulties in the way of its attainment.

We have not been able to ascertain at what time the sharp and flat were brought into use. The sharp was at first a square in form, according to Butler (Principles, &c., 1636). The flat was always a small b. The natural is, comparatively, of modern date. Till towards the close of the seven-teenth century the secondary use of the sharp was to contra-dict the flat, and of the flat to contradict the sharp. The natural, introduced at nearly the same time, relieved the two other characters from part of their duty. In the printed score of Lully's opera, Periade, dated 1654, the natural does not appear; nor even in his Armide, published in 1710. In Purcell's Diocletian (1691) sharps and flats contradict each other; but the natural is occasionally used. [Sharp; Flat; Natural.]

The grouping of quavers, &c., by means of ligatures, or ties, joining the stems, is also one of the im-provEMENTS made in the latter half of the seventeenth cen-tury. It does not seem to have been practised in 1653, when Lawes printed his 'Ayres,' &c. In Lully's Proserpine (1680) we find quavers tied at the bottom of their stems, in groups of four, but semiquavers are all detached. The use of bars became general at the close of the seventeenth century, though this mode of division was partially adopted much earlier. [Bar; Abbreviations; Dot; Note; Time.]

NOTE, in Music, a character which, by its place on the staff, represents a sound, and by its form determines the time or continuance of such sound. There are six notes in ordinary use,—the Semibreve, Minim, Crotchet, Quaver, Semiquaver, and Demi-semi-quaver. To these may be added the Breve, yet met with in sacred music; and the half-Demi-semi-quaver, much used, and often unnecessarily, by the moderns. [Ibarre; Semibreve, &c.]

The value, or length in time, of the Semibreve may be considered a whole; the minim is ½ the crotchet; the quaver ½ the semiquaver, and the demi-semi-quaver ¼. Hence is formed the following Table of Proportions, as it is denominated:—

\[
\begin{align*}
\text{One Semibreve} \quad \text{is equal to} & \quad 2 \\
\text{2 Minims} & \quad \text{or} & \quad 4 \text{Crotchets} \\
\text{2 Quavers} & \quad \text{or} & \quad 4 \text{Semiquavers} \\
\text{2 Demi-semi-quavers} & \quad \text{or} & \quad 8 \text{Minims} \\
\end{align*}
\]

And hence it will also appear, that one minim is equal to two crotchets, &c.; one crotchet, to two quavers, &c., &c.

The word Note is frequently used as a synonym of sound; thus we say a high, low, loud, or soft note; or, the note a; flat note, &c. &c. And long sounds occasionally arise out of this double meaning; but the musical notation is very imperfect, and any attempt to improve this or any other branch of the art meets with little support from its professors.

NOTES, BANK. [Bank—Banker—Banking.]

NOTHING. In the article INFINITY will be found as much upon this word as will enable us to dispense with the consideration of the symbol 0 as the limit approached but not attained by the continual diminution of magnitude.

Among the terms used in mathematical language there is nothing, cipher, and zero. The etymologies of the two latter terms are explained under those heads: their meaning is somewhat different. The first word, nothing, implies the absence of all magnitude, but its occurrence denotes either that magnitude did exist, or might have existed, or does exist under similar circumstances in other problems, or in the same problem under different points of view. Were it not for this, the word would be useless: thus we use the symbols 0 and 0, and speak of £20 generally as twenty pounds, no shillings, no pence, and farthings. But if this £20 had been the amount of a number of sums, the symbol £20 0 0 would be useful as indicating that the results of an operation (addition) had left nothing. Zero is occasionally used as symbols of distinction wherever there have been expected. The term unity would have been useless in the same manner, except as a tacit reference to other units; anything we please is one of its kind, and accordingly the indefinite article (a or an), which is certainly one in etymology, has lost its definite monosyllabic signification, because such signification is useless. This point is of some importance to the mathematician, as justifying the use of the symbol 0 where it might seem redundant. The 0 and 1 are frequently used as symbols of distinction, where they are not wanted as symbols of operation: in like manner, in common language, the simple phrase 'one ox and no sheep,' though it implies no more of positive conception than the more simple phrase 'an ox,' may be a proper description where the second would be no such thing.

The cipher is 0 considered in a purely arithmetical point of view, as the mode of denoting a blank column intervening between or following columns which contain significative numbers.

The term zero considers 0 rather as a starting point of magnitude than as the symbol for the recognition of absence of all magnitude, and really denotes, not the entire absence of magnitude, but the arbitrary determination to reckon all magnitudes by their excess or defect from a certain zero magnitude. Thus the zero point of the thermometer does not mean that when there is no temperature, but a certain temperature, that of freezing water; and degrees above and below zero indicate excesses or defects of tempera.
nature above or below that standard. It is then perfectly proper to say that a degree below zero is a lower temperature than five degrees, and that both are less than zero. Whenever magnitude is considered in connection with modifications, the zero and even the nothing of such magnitude may require to be considered with similar modifications, even the same absolute magnitude is lost. Straight lines, for example, admit of consideration with reference not only to their lengths, but also to their positions and directions. Let the straight lines diminish each by an approach of one extremity towards the other, and position and direction still retain all their property, on the contrary, the same line, though having the same linear magnitude (length): when the one extremity actually reaches the other, length is destroyed, but one indication of position still remains, the fixed extremity, or what was the fixed extremity as long as the line has length. Different, in short, will all tell something about the positions of the different lines which left them; and there are as many nothing of length (distinguishable) as there are different points in space. These zeros, as it might be proper to call them, are of most essential consequence, or zero, in the complete method of connecting the explanations of symbols in algebra (in the widest sense of the term) with those of the restricted or arithmetical sense. [Negative Quantities.] All direction however has disappeared, and the expression of the actual meaning of the term is that which is reduced to zero, or which is derived from zero. It is the principle of all signification, and its extension arising out of this, the principles of which appear in Fractions, Vanishing, will be applied in the article Tangent.

It might seem as if, in the consideration of the term nothing, we had commenced an explanation of negative quantities, and had obtained a justification of the phrase less than nothing, if not of less than nothing. This may be true to a certain extent, too limited however for the purposes of algebra, and not sufficiently expressive of the actual meaning of the term. When the distinction of positive and negative quantities is explained and adopted, the terms greater and less are no longer used in their simple arithmetical meaning, but to take a wider signification, such as will allow of other theorems of algebra to remain true under the same phraseology as before. After an express extension of signification has been accorded to these terms, it is not wonderful that uses of them should be perfectly allowable which could not be made if we retained the old signification. Those who use the extended meanings, without fully understanding and admitting them, will make a mystery of algebra; those who refuse to make the extensions, and yet charge others who do not refuse with falling into all the absurdities which extended uses without extended meanings present to them, are in the condition of the Stoics who asserted that the French were such fools as not to know the difference between a cabbage and a shoe (chos).

But those again who, professing to use extended meanings, do not take care to make their logick conformable to them, but neglect to distinguish between those meanings which are true of one set of meanings and not of the other, will fall into such mistakes as would be made by him who should conclude that blood is salt water, because both circulate in arms (of the human body and of the sea).

Admitting the scale of positive and negative numbers, \(-3, -2, -1, 0, 1, 2, 3, \ldots\) it is obvious that on the right of 0, on which we have quantities common to pure arithmetic and algebra, we pass from the greater to the less by moving our eyes from right to left; while on the left we have no meaning at all of greater and less yet established. Let us agree then that we are to pass from what we will call the greater to what we will call the less by passing from right to left in all cases; and there is no necessity for premising when we say that all positive quantities are less than 0, and that -19 is less than -5.

But is this a convention a purely arbitrary one? We answer that it rather bears the character of interpretation [Interpretation] than of convention. Having now means of expressing quantities by the means of addition and subtraction, we are rather to ask what greater and less ought to mean than what, with liberty of choice, we shall make them mean. The great characteristics of greater and less (or more and less) in arithmetic is that the more you have, and that the more you take away the less you have, and vice versa. The preceding extensions of greater and less are the only ones which will allow of these theorems remaining universally true. Thus

\[ 3 + (-3) = 0, \] add more, and
\[ 3 + (-4) = -1, \]
and \(-1\) is greater than \(-2\). Again,
\[ -5 + (-12) = -17, \] subtract less,
\[ -5 + (-13) = -18, \] and 8 is greater than 7.

It is however to be remembered, though no rule has been laid down upon the subject, that a \(-5+2\) is to be gathered from the practice of writers that the terms small does not signify less, but that a small company is in the intended meaning. This is particularly used in the Differential Calculus to denote an approach to zero, which in a negative quantity is algebraic increase, and in a positive quantity diminution. And most, perhaps all writers on the Differential Calculus, are in a great many cases, particular to a company less in the intended meaning. The former term is used in the algebraical and sometimes only in the analytical sense. The inconvenience is not very great, as a student must have learned to contain with greater difficulties than those of an unexplained use of dubious terms, before he is able to take his way to the higher mathematics. But it may be useful to give him a hint that, in reading works of analysis, he would do well at first always to stop for a moment when the word greater or less occurs, and ask himself whether the problem requires and allows the extended signification and not of less than nothing of distinct in every place. This will at once ensure the soundness of the first reading, and facilitate the second.

Nothing, Differences of. This name is given to certain letters, and it is analogous to the several different theorems that it is worth while to tabulate them, and to consider them as fundamental numbers of reference. They were first specifically noted in this point of view by the late Bishop Brinkley. We shall here confine ourselves to a description of their derivation, an exposition made of calculating them, a table of some of their values, and one instance of their use.

If we take a series of terms \(a, b, c, \ldots\), and form the successive differences of \(a, \text{ Differences, Calculus or,}\) the symbols \(\Delta a, \Delta^2 a, \ldots\), have a meaning which reduces the excess of \(b\) above \(a, \ldots\)

\(\Delta a = b - a,\)

\(\Delta^2 a = \Delta b - \Delta a,\)

\(\Delta^3 a = \Delta^2 b - \Delta^2 a,\)

\(\Delta^4 a = \Delta^3 b - \Delta^3 a, \ldots\)

But as the proceeding series is a set of values of \(a + (a + 1) - 1\), in which the first term is \(0 = x \frac{1}{2} 1\) it would be necessary in using several series beginning with 0, to make marks of distinction between \(a, \Delta a, \Delta^2 a, \ldots\). In this number and the others of the series, and that in another borderless, the most useful case is that in which the whole and positive powers of 0, 1, 2, 3, \ldots form the series in question; thus if we take the series of cubes,

\(0^3 = 0,\)

\(1^3 = 1,\)

\(2^3 = 8,\)

\(3^3 = 27,\)

\(4^3 = 64,\)

\(5^3 = 125.\)

The symbol \(\Delta^0 m\), whenever \(m\) is greater than \(a, \ldots\)

\(\Delta^0 m = m + \frac{1}{2} (m + 1) \ldots\)

For all other cases the differences of \(m + 1\) may be found from those of \(m\) by the following equation:

\(\Delta(m + 1) = r (\Delta m + \Delta a)\)

It is frequently useful to have the term \(\Delta^m = \frac{1}{2} \ldots \frac{1}{2} \ldots\)

\((r + 1)\) arranged in tables. If we wish to make it separately, we have, denoting the proceeding fractions by \(\Delta^0 a,\)

\(\Delta^0 a = 1, a + r (\Delta a + \Delta a)\)

The proceeding table contains both the differences and the differences divided, as just explained, up to those formed from the series of tenth powers; arranged so that square differences must be looked for above, or on the dotted line, and divided differences below the dotted line; the first by the mean of the left hand column and highest row; the second by the right hand column and lowest row. Thus

\(\Delta^0 a = 12,600,\)

\(\Delta^0 a = 12,345,\)

\(\Delta^0 a = 15,120,\)

\(\Delta^0 a = 20,765.\)
The only one not in the table is $\Delta \theta$ or which 's always unity.

The uses of these differences mainly consist in the rapidity with which transformations can be made by means of them, whether of a geometrical, statistical, or of a transcendental kind, such as the following, $a$ being a whole number: $$x^2 = x + A \Delta \theta \cdot a \cdot (x(x-1) + A \Delta \theta \cdot a \cdot (x(x-1)(x-2)),$$ and so on. [See also Operations, Series.]

The following works contain many properties of these established, a Table of Calculus of Finite Differences, *passim; and Lib. Useful Knowledge, ' Differential and Integral Calculus,' pp. 253-581, and 307-311.

NOTHRUS. [TETRASONID.

NOTICE is a term used in English law with reference to such kinds of transactions. That use of it which is most important, and which it is here proposed to explain, has reference to contracts of buying and selling, and mainly so far as such contracts come under the cognizance of course of law. In this way it affects the knowledge of a party to the contract of any fact which is connected with the contract, and may become a matter of dispute either between the parties to the contract, or between them or any of them and any other person not a party to that contract. The term notice is most commonly applied to buying and selling of land, or some interest in land, and the matter generally in dispute is, whether the interest of a person who is not a party to the contract is in any way to be affected by it.

In English law, is an ambiguous term, and has different meanings according as we contemplate the giver or the receiver of what is called notice. To give notice is to communicate something to another person; the person who receives the communication, is said to have notice, and when it is proved that the person has notice, he is supposed to have knowledge of the thing communicated. Thus notice comes to have the meaning of knowledge when applied to him who is the receiver of the notice; and it is not always easy to avoid the ambiguity resulting from this double meaning of the word.

Notice of a fact (noting being here considered with reference to the receiver) may mean either knowledge of the fact itself. In both cases the knowledge must be proved by evidence, and the only difference in the evidence is this; in the former case a fact is to be proved, which fact, when proved, shall be considered knowledge; and in the second case a fact is to be proved, which cannot be considered as knowledge, but is a fact, the existence of which leads to a presumption, that is, to an inference of some fact which is considered as knowledge. If a man receive a written communication from another person of a certain demand upon him by such person, all that is proved by evidence is that he did receive such communication; but that fact being established, all the world imputes to the receiver of such communication knowledge of the demand contained in it. The fact, in order to have any relation to the contract, must of course be such a fact as would affect the contract if it were expressly made part of it. A fact of this kind then being established, which is either knowledge or legal presumption of knowledge, the legal conclusion is, that the person who had such knowledge at the time of making the contract must be considered as having acquiesced in such fact; in other words, such fact must be considered to have the same effect as if it were expressed in and incorporated with the contract.

Notice has been divided by writers on English law into 'actual' and 'constructive.' "Actual notice," it is said, "requires no definition;" and "constructive notice, in its nature, is no more than evidence of notice, the presumptions of which are so violent that the court will not allow even of its being controverted." It is difficult to say what will amount to constructive notice. (Sugden's Vendors and Purchasers.) It is not stated by this writer what actual notice is, and since his remarks on constructive notice are equally applicable to actual notice, he has in fact made no distinction between the two kinds of notice. In any case, what has been said on the general subject of knowledge, we may take an instance of what would be called actual notice in English law. We will suppose this actual notice to be a statement in a written notice, addressed to a certain piece of land and in the course of the treaty for the purchase of it, and by him handed to the purchaser. Now it is obvious that all this, when proved, does not make the knowledge of the purchaser; but these facts, when proved, give evidence of knowledge, and thus the presumptions of which are so violent that the universal consent of mankind will not allow even of its being controverted. There is then no further distinction between actual and constructive notice, considered as a matter belonging to the general subject of evidences, than what has been already stated; and the only question which can arise in any system of law is, what facts, not capable of being considered as knowledge, shall be considered, when proved, as leading to a legal presumption of such facts as may be considered knowledge.

These general principles may be better understood by their application to particular cases, in English law, of buying and selling land. But it should be premised that there are cases of what is often called notice, in English law, where no knowledge of anything is proved, but the existence of a certain thing is proved, and that is more than knowledge, as it affects the person to the person to be affected by it. Thus, when there is a public act of parliament, every body is legally supposed to have notice of it. But this is notice which arises from positive law, and is not presumed from the proved knowledge of another fact; it would therefore be more appropriate to give it some other name, and not to confound it, as some text writers do, with that which they call constructive notice. Another example of such notice made by positive law is, where there is a suit pending 2 which may affect the subject of sale; in this case the purchaser is also said to have notice of it, and he buys subject to what may be decreed in the suit. All conveyances by any bankrupt bond fide made and executed before the date and issuing of the flat are valid, notwithstanding any prior claim of bankruptcy committed by the bankrupt, provided the person to whom the conveyance is made had not at the time of such conveyance notice of any prior act of bankrupt by committed by the bankrupt.

Where facts are proved to be known to a man which are sufficient to make him liable in law it is considered to know all that he might have known if he had made inquiry. For instance, if a man buys an estate which is in the possession of a tenant, notice of such possession is notice of any lease or other interest which the tenant may have in the estate; and though the seller may affect to sell the complete and immediate interest in the estate, the buyer will...

* By a recent Act, 2 Vic. c. 11, purchasers and mortgagees are not to be bound by its precedent of which they have not express notice, unless the names, &c. of the parties to be affected thereby, are registered, as the act prescribes.
take it subject to the interest of the tenant. And if a tenant under a lease has some further interest in the land by agreement posterior to the date of the lease, the buyer of the land, who has notice of the tenant's possession, has constructive notice of such agreement, and is bound to look to it under all the tenant's rights. It will of course be observed that the contract of a purchaser with a seller cannot affect the previous contract, about the same land, of another person with the same seller, so far as the mortgagee's liabilities to the seller and that person are concerned. But the question between the two persons who have dealt with the seller is. Which of the two is to have that which he has agreed to buy, and which of the two is to have the trouble of settling the dispute with the seller, which the consequent contract, by which he has what is called notice of the former contract, must be considered as having the benefit of his own contract, but still subject to the prior contract; and if he has bought the estate and obtained a conveyance of it, having notice of the prior contract, he will be compelled to convey the estate to the person who had such prior contract with the vendor.

If the prior contractor has obtained any legal estate in the land, the buyer, of course, whether he has notice or not, only obtains from the vendor such interest as he can sell.

That which is notice to a man's agent is notice to himself, provided the agent has the notice in the transaction in which he acts as agent. This doctrine is obviously founded on the principle that the principal is for all purposes, in all matters in which the principal transacts by his agent.

It seems to be determined that the mere fact of a man being witness to the execution of a deed, will not be notice to him of the contents of the deed: for the nature of that transaction amounts to a witnessing a deed without any notice, as has been said, connected with a knowledge of the contents of the deed.

Sometimes a person who is entitled to a sum of money or the interest of a sum of money which is in the hands of a trustee, will fraudulently tell his identifiers, in all matters which the principal transacts by his agent.

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the sentence,' but the latter part of this proposition may be assented to without giving our assent to the former part.

NOTRE DAME. [Paris.]

NOTTINGHAM, EARL OF, HENAGE FINCH, whose father was recorder of the city of London, and a member of the family of the earls of Winchelsea, was born in 1621. He was educated at Westminster school, and was afterwards removed to Christ Church, Oxford. After leaving the university he became tutor in the household of the Duke of Lennox, and on the restoration of Charles II. he was appointed solicitor-general, and distinguished himself in the prosecution of the regicides. He published 'An exact and most impartial Account of the Indictment, Arraignment, Trial, and Judgment of the Lord Viscount of Clarendon,' 4to, 1660; &c. He was created earl of Shaftesbury on 20 August 1660, and about the same time was created a baronet. In 1663 the diploma of LL.D. was presented to him by the University of Oxford. He took a prominent part in the impeachment of the earl of Clarendon in 1667; and in 1670 was appointed attorney-general. He succeeded the earl of Shaftesbury as lord-keeper of the great seal in 1675, and in 1675 was made lord-chancellor of England. He presided at the trial of Titus Oates, who was then a member of the House of Commons, and pronounced judgment against that nobleman in a speech of extraordinary eloquence. He was created earl of Nottingham in 1681, and died in 1682.

Besides the account of the trial of the regicides, he published several speeches in both Houses of Parliament, 1679: 'Speech of the Advocate of William Viscount Stafford,' 1680: 'Arguments upon the Decree in the Cause between the Hon. Charles Howard, Esq., Plaintiff; Henry, late duke of Norfolk; Henry, lord Mowbray, and the Marquis of Dorchester and Richard Marriot, Esq., Defendants; wherein the several ways and methods of limiting a trust for a term of years, are fully debated,' Lond., 1683, fol.: 'An argument of the Claim of the Crown to Pardon on Impeachment,' fol. and 8vo, 1719: there is a volume of Cases decreed in the High Court of Chancery during the time Sir Henage Finch, afterwards earl of Nottingham, was lord chancellor,' 1725. Some valuable Chancery Reports, written with his own hand, were left by him.

The Caves of Nottinghamshire.—It is a well-known fact that the celebrated town of Nottingham is surrounded by a group of limestone rocks. These rocks are of great economic value, for they yield a rich and varied mineral deposit. They are particularly valuable for their coal and limestone, which are extensively used in the manufacturing and mining industries.

The limestone is of the magnesian variety, and is often associated with red-marl. The coal measures are generally found in the vicinity of the limestone, and are of great importance for the production of coke and anthracite.

The area of the county, divided into districts, is estimated at 83 square miles. The population in 1821 was 186,873; in 1831, 225,327; showing an increase in ten years of 38,454, or 20 per cent.; and giving 269 inhabitants to a square mile. In size it is the twenty-seventh of English counties; in amount of population, the fiftieth in the kingdom; in density of population, the tenth. Nottingham, the capital, is near the Trent, 109 miles in a direct line north-north-west of London, or 124 miles by the mail-road through Woburn, Newport Pagnell, Harborough, Leicester, and Longborough.

The area of the county is 83 square miles. The surface of the county is undulating, and it is possible that the Trent is for the most part flat. Bolsover hill rises to the east of Newark: the ridges of Newstead Skirtis the immediate valley of the Trent from the neighbourhood of Newstead to Nottingham. The eastern side of the ridge has a very high slope towards the west, and the western side, from the Devens and its tributary the Smite. The south is of the county, between the Trent and the vale of Belvoir, is the Wold Hills, in which are included the Hotchley or Leake hills. On the west side of the Trent the ground is generally higher than the Idle in the same latitude near the Erewash in the south-west. The western escarpment which skirts the valley of the Idle is steeper: and it may be observed of the hills generally in this county, that their western slope is steeper than the eastern. Peak-tree hill and Gringley hill (232 feet) are at the northern end of these uplands, which are, just above the Idle, and Langton Harbour and Holland Hill (467 feet high) are between the Trent and the Erewash. West of the Idle the ground rises again, but it is intersected by the valleys through which the tributaries of the Idle flow. Newark, on the head of the Maun, one of these tributaries, is a high land of Shirewood or Sherwood Forest, known in tradition as the principal haunt of Robin Hood. Sutton-in-ashfield hill, west of Mansfield, is about 600 feet high.

The strata which occupy the county successively each other in order from east to west. The coal, south-eastern border of the county is chiefly occupied by the coalfield, and, west of the Idle, the Vale of Belvoir, which lies to the east of the Devens and the Smite, and, passing to the west of the Idle near its source, shows the greater part of the hills of Nottinghamshire and Leicester county. The vale of Trent and the uplands to the west of it are for the most part composed of rocks of the red-marl or new red-sandstone group. In the northern part of the county these formations are separated by a gap, 3 miles wide, near the source of the Idle. Radford, Radcliffe, and Ratcliffe, and perhaps Rudington, all in the neighbourhood of the Trent, and not far from Nottingham. Among the beds of this formation, is a sandstone, too soft to admit of being easily excavated. The caves are common in this sands and marls. The supposed to have given to that town (and into the county) its name, Snodengham, 'the home of caverns.' There are under town many caves, some of which are very deep and comparatively modern date, but others of considerable antiquity. Those are in the face of a cliff near the river Lene, west of Nottingham, and there are some remarkable excavations at Sneathen close to Nottingham. These are all probably artificial, and, if originating in natural caverns, have been enlarged and modified by human labours. Limestone hewers are plentifully in this formation, and is quarried in several places. The newer magnesian or conglomerate limestone underlies the red-marl; but in some parts these formations are separated by beds of quartzite gravel, extending to the depth of 600 or 900 feet, and often consolidated in a soft pudding-stone, of which the Castle hill at Nottingham is a specimen. 'Although this gravel has been referred by some to a recent alluvial origin, it seems more probable that it has been deposited in some ancient sea, and must be ascribed to ancient formation upon this formation. It constitutes the prevailing stratum throughout Sherwood Forest.' (Conybeare and Philips's Outlines of the Geology of England and Wales.)

The beds of the magnesian limestone occupy a tract varying in breadth from 4 to 7 miles, and in length 20 miles, along the western face of the county, west of a line drawn from Mansfield to Nottingham. Near Mansfield the strata are arched and contorted. West of the magnesian limestone occurs the great coal-field of South Yorkshire, Derbyshire, and Nottinghamshire, of which coal-field only a small part is included in the county. Between Mansfield and Nottingham the limestone immediately overlies the coal, but south-west of Nottingham the coal-measures crop out from beneath the red-marl which occurs the valley of the Trent. There are many small pits in the eastern part of the county. The general direction of the dip of the coal-beds is eastward. The seams of coal vary from one or two to five or six feet.

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in thickness. The quality of the coal is similar to that of Newcastle, but rather inferior.

Blue limestone, approaching to marble in texture, is quarried near Lincolnshire, and there are disused quarries of gypsum and of a reddish stone sufficiently hard for building, or suited for burning in lime kilns. There are extensive quarries of red-marl, both as building and flux. There are extensive quarries of red-stone, from which immense blocks are raised, near Mansfield, near the boundary of the red-marl and the magnesian limestone. A quarry of the limestone at Mansfield Woodhouse is worked for lime; but the yellowish-colour and these blocks of granite would render it more valuable than Portland stone, were it not for its extreme hardnes.

Coarse paving-stone, much used at Nottingham, is quarried at Linby, north of that town, in the magnesian limestone district.

Hydrography, Constituent Details.—(1) On the whole county belongs to the basin of the Trent, which river first touches the south-west border of the county at the junction of the Soar, flows along the border about 3 miles to the junction of the Erewash, and then entering the county flows through it 25 miles farther, to below Gainsborough (Lincolnshire), finally quits the county and flows through the marshes of the Isle of Grain (Kent) into the Thames.

(2) The waters that appertain to this county are about 33 miles. It is a broad river, bordered by a belt of low lands, and navigable through out for river craft, and up to Gainsborough for sea-borne vessels of 200 tons. There was not until lately any bridge over the Erewash between Newark and Gainsborough, which towns are 21 miles distant. Recently a cast-iron bridge, of four arches, each 118 feet span, has been thrown over the river at Dunham. The total length of the bridge is 536 feet.

The Idle is formed by the junction of several streams. The River Rawdon Water rises in Sherwood Forest 3 miles south of Mansfield, and flows north east 12 miles to the town of Ollerton. Here it is joined on the left bank by the Maun, which rises at the village of Hardwick, and flows north-east 30 miles by Mansfield and through a large sheet of water, and then, after its junction with the Pouler (7 miles long), which also rises in Derbyshire, flows through Clumber park, where it again expands. From the junction of the wall, the Idle flows north-west some 3 miles, and then, receiving on the left bank, just above that town, the Rain or the Ryton, 24 miles long, which rises in Yorkshire, and flows by Worksop and Blyth. After receiving the Ryton, the Idle flows eastward 2 miles to the border of Lincolnshire, and 7 miles more along the border, or just within it, into the Trent at West Stockwith. Below Bawtry its course is through the marshes of 'the Car,' south of the Island of Ahholm. In this part it is called the Bier Dyke, Bykerdyke, or Veardyke, while the name of the Nidd is applied to a stream that runs north through the marshes of Thorne level into the lower part of the Trent. [AHOLM, ISLE OF; LINCOLNSHIRE.] The whole course of the Idle, measured from the head to Witham, is 137 miles. From the head near the Meden, into the Trent at West Stockwith, is about 47 miles. It is navigable from East Retford, 12 miles above Bawtry. None of its tributaries are navigable.

The Soar has about 8 miles of its course, navigable through the park of the Duke of Newcastle, to which latter it belongs. [LEICESTERSHIRE.] The Erewash rises in the county, very near the head of the Maun, and flows south-west to the border, and south-south-east along the border of this county and Derbyshire to its junction with the Trent. The Lugg rises near Newstead Abbey, 5 miles south of Mansfield, and flows 12 or 13 miles southward into the Trent near Nottingham; it passes through Newstead park, and close to the town of Nottingham. The Dover Beck rises in Sherwood Forest and flows 10 miles south-east into the Trent. The Devil's Dyke rises in Leicestershire, and into the Trent through the vale of Belvoir. Of its whole course of more than 20 miles, 8 or 9 belong to this county. Its tributary, the Smite, 18 miles long, and the Whipping, 10 miles long, which flows into the Smite, belong chiefly to this county. The rising of the Smite is at the juncture of the Canal and the Trent is insolated by a navigable channel communicating between these two rivers. [NEWARK.]

Those parts of the Erewash and Cromford canals which are on the east side of the Erewash belong to Nottinghamshire. (See Derby.)

The Nottingham Canal commences in the Cromford Canal at Langley Bridge, and runs in an irregular line south-east into the river Trent at Trent Bridge near Nottingham. It has a cut from above Nottingham into the river Trent at Edenton, bierthoret, and the canal was obtained in 1792, and the canal completed in 1795.

The Grantham Canal commences at the town of Grantham in Lincolnshire, and pursues a very circuitous course to more than 50 miles to the Trent bridge near Nottingham, close to the town of Grantham. It is partly in Lincolnshire, partly in Leicestershire, and partly in Nottinghamshire. The Acts for its obtains were obtained in 1793 and 1795; the navigation is now complete between Grantham and Nottingham, but at short from the town of its course by about 3 miles.

The Chesterfield Canal commences in the Trent near Stockwith, and runs south-west round the base of Gringley Beacon to East Retford; and from thence westward, by Town Bridge, and then again south-west through Yorkshire and Derbyshire to Chesterfield. In the latter part is a tunnel more than 1 mile long; and near Gringley Beacon is another tunnel 153 yards long. This canal was commenced under an Act obtained in 1771, and was finished in 1776 or 1777. From the Trent to Retford it will receive boats of 50 or 60 tons burden of construction, and carry 25 tons. From the Trent to Worksop is a rise of 250 feet, and to the summit-level is a total rise of 335 feet.

The principal coach-roads are as follows:—the Cars and Coaches, from the Midlands to London, which runs through Grantham in Lincolnshire, and 180 miles from Heaton Hall, London; it passes through Newark (124 miles), Ollerton (137 miles), and Worksop (146 miles), into Yorkshire. The Edinburgh and York mail-road branches from Beeston at the Trent bridge near Nottingham (124 miles) and Market Harborough (135 miles) into Derbyshire. The Leeds mail-road enters the county at Upper Broughton, 61 miles beyond Leeds Moorhay in Leicestershire, and runs to Nottingham, where it falls in with the Halifax road.

The Maun line runs from the Manor of Mansfield to the Cromford Canal at Pinxton, near Allesthorpe in Derbyshire, with a branch to the Coal and Iron-works. This railway is above 8 miles long; at its commencement at Mansfield it is 10 feet 8 inches above the level of the Cromford Canal at Pinxton; its terminus at Pinxton is 8 feet above the canal. The Act for this railway was obtained a.d. 1817. It is chiefly used for coal and coke. Branches of the Midland Counties Railway connect the London and Birmingham railway at Rugby with the Trent near Nottingham (135 miles), and the Great Northern Railway (146 miles) with the Trent near Nottingham, where they meet.

Agriculture.—The climate of this county is dry and healthy, and upon some of the light lands the harvest is as early as in many counties more to the south. The face of the country is undulating without rising to any great heights. Through Leicestershire the wind is mild, and cause the clouds to discharge their moisture before they reach Nottinghamshire: the heaviest falls are when the wind comes from the east.

The county may be divided into three districts: a central district, which contains the greater part of the county, extends along the vale of Trent to the borders of Leicestershire, and to the north of Nottingham along the Trent forest land and border, in a strip of land about 30 miles wide.
Fri day before the Sunday-fortnight before Easter, May 14, Whigo-Tuesday, August 2, November 1, Monday before December 11; Mansfield, April 5, July 10, second Thursday in October; Warsop, May 21, November 17; Edwinstow, October 24; Worksop, March 31, October 15; Tuxford, September 26, hops; Retford, April 2, October 2, hops.

Divisions, Town, &c.—Nottinghamshire is divided into six wapentakes and one liberty, beside the county of the town of Nottingham. The relative situation, &c. of these divisions is as follows:—

Each of the wapentakes consists of a north and a south division, except Bassetlaw, which has three divisions, as given above. The liberty of Southwell consists of parishes scattered hundred miles from the county town, and is described elsewhere; of the others we subjoin an account.

Nottingham is locally situated in the southern division of Broxtow hundred, on the north bank of the river Lene, and is connected with it by a line more miles in length than any other town. It was an ancient Roman station, and appears to be a town of some importance at the time of the Conquest, by which it was secured to the Conqueror, and became his property. The town was erected on a large and elevated site, and was surrounded by a strong fortification, which is still visible in some parts. The modern town is built on the site of the old castle, which was destroyed by the Earl of Holland in the reign of Edward I.

The town is situated on the banks of the river Trent, and is the largest town in the county. It is the seat of the county council, and has a large and prosperous trade. The town is also the seat of several important institutions, including the University of Nottingham and the Royal Nottingham and Sherwood Forest Park.

The town is well supplied with water, and is enthusiastically regarded as one of the most beautiful in England. The river Trent flows through the town, and is surrounded by a series of parks and gardens, which are much frequented by the inhabitants.

The town is also famous for its coal-mining industry, which has been developed on a large scale. The coal is of excellent quality, and is much in demand for the manufacture of coke.

The town is also noted for its large population, which is estimated at over 300,000. The town is divided into several wards, each of which is represented in the town council.
disturbances in 1811-12, and the riot arising out of the political excitement of 1831, on which occasion the castle was burnt by the rioters.

The town is on a considerable slope on the north bank of the Trent, and ends of the extensive view of the Vale of Trent.

It consists of a number of streets irregularly laid out but remarkably well paved. Those in the central and more ancient parts of the town are narrow; but considerable improvements have been effected of late years, the streets of modern brick and stone. 

The extension of the town has, in the right of the town inarches over the Trent, a very ancient structure, and exhibiting, from frequent repairs, great architectural variety: connected with this bridge are a causeway over the meadows and an embankment to protect the lower part of the town in the valley.

The Trent arches were made to permit the passage of vessels up the river.

The environs of Nottingham are very pleasant.

Among the principal buildings are 'the New Exchange' at the east end of the market-place, a brick building erected early in the last century, and repaired and beautified in 1870. The lower part is appropriated to shopping rooms of which are the shambles; the upper part contains a suite of noble rooms for the transaction of public business or for assemblies.

The county-hall, rebuilt A.D. 1770, is a commodious building, with some building, with some conveniences and apartments for the judges, jury, &c. The upper court is a spacious edifice, of which the town gaol forms the ground-floor. There are a small plain theatre; a grand stand on the race-course, which is to the north of the town, and a race-course itself in the site of the old cavalry barracks in the castle park; and a building erected at the end of the riding-house for the yeomanry, and now used as a circus or for other public amusements.

The borough before its late enlargement comprehended the manors of St. Mary, Trent, and St. Nicholas. The church of St. Mary is in the central part of the town. It is a large church, with a fine tower at the intersection of the transverse, rising two stages above the roof of the church, crowned with a battlement and eight crocketed pinnacles.

The church of St. Nicholas is in the market-place, and has been modernised, but without very bad taste; the rest is of perpendicular character, and presents several peculiar features: it has a very large proportion of window light, perhaps greater than any other church in England. The interior is good, and contains some fine monuments. That of the Catholics is in a neat brick building. It is a large church, originally of perpendicular character, but the greater part has been modernised. It has a plain western tower, surmounted by a lofty octagonal crocketed spire. St. Nicholas's church is in Castlegate-street, near the castle; it is a plain brick building, with stone quoinings, and cornices, erected in the latter end of the seventeenth century, in place of one pulled down during the civil war of Charles I. St. James's church or chapel is in Stuward lane, near the general district of the racecourse. It is a neat modern edifice of perpendicular character, with a lofty octagonal battlemented tower. St. Paul's chapel, in St. Mary's parish, is a modern Grecian building with a Doric portico. The church at Lenton is very small; it was built after the dissolution of the priory, but some portions of a more ancient building appear to have been employed in its erection. Radford and Sneinton churches are both small; the latter stands on the summit of an excavated rock, and commands an extensive view. A grant for a new church in Snenton parish has been made by the commissioners for the erection of new churches. There are several dissenting places of worship in Nottingham, especially for Wesleyan Methodists, Independents, and Baptists. The Catholics, Jews, Quakers, Unitarians, and several other sects have each their place of worship; that of the Catholics is in a neat brick building. There are several charitable institutions. Plumtree hospital for poor and aged widows is a neat brick building, coated with cement, rebuilt within a few years: beside the inmates, there are several out-patients. Collins's hospital is for twenty-four aged widows or widowers, who have each a room of their own, and a weekly allowance, beside clothes: the hospital is a neat brick building. Lambley hospital for decayed burgesses or their widows is a neat building consisting of a centre and two wings, with a green in front. There are a number of other hospitals which are not now in a state of repair.

The town is divided for the purpose of redemption, the three parts of it were respectively

Three parts

The Trent

Radford

Lenton

It has been chartered in the following manner: The first charter was granted in the reign of Charles I., but the town was rendered free by Charles II., and was further advanced in the reign of George II., and by the charter of King George III. in 1774, and has since been confirmed by King George IV. in 1827, and King George V. in 1862.

There are several mills for spinning cotton and woollen yarn, and for throwing silk, and much cotton yarn is obtained from the mills of Derbyshire. The machines for making bobbin-net and lace, which are very numerous, are worked by the hands of women by capitalists, who invest a considerable sum in the kind of property. Steam-power has however been introduced of late into this manufacture. There are several dye-houses; there are also white-lead works and an iron foundry.

The town was formerly a market town, but there are now only two markets, held on Wednesday and Saturday for corn, cattle, and general provisions; the Saturday market is one of the principal in the midland counties. There are several yearly fairs for cattle, cheese, and cloth; at one of these fairs, distinguished by the name of the 'Nightingale fair,' a considerable quantity of brads, fenders, and curtains are sold. The trade of the town is much promoted by its proximity to the Trent, which is navigable, and from the communications thus afforded with the various canals connected with the river. The Nottingham canal passes close to the town, and the Trent at Trent Bridge.

The corporation under the Municipal Reform Act consists of fourteen aldermen and forty-two councillors. The borough in its present enlarged extent is divided into seven parishes: St. Mary's, Byron, Sneinton, Exchange, Canal, Radford, and Sherwood wards; and is a corporation of the first class. The provision for the police force is made by the magistrates and sheriffs: there are a recorder, town-clerk, and other officers.

The county magistrates have concurrent jurisdiction in the borough with the mayor and aldermen. Before the establishment of the police force, the magistrates appointed by the magistrates at quarter sessions and some watchmen were maintained by private subscription. Water is supplied by three companies in abundance and at a reasonable rate. The assizes and quarter sessions for the county are held here; also quarter-sessions for the borough, and a Court of Record for the borough every fortnight, and a sheriff's court every month for the recovery of small debts.

The borough returns two members to parliament; the sheriffs are the returning officers. Nottingham is a police place for the northern part of the county.

The living of St. Nicholas and St. Peter are rectories, of the clear yearly value of 216L (with a glebe-house) and 336L respectively: that of St. Mary is a vicarage, of the clear yearly value of 696L, with a glebe-house. The parsonage of St. James is in the living of St. Mary by gift of John St. James, of London, in 1806, for the sum of 200L. Radford and Lenton are vicarages, of the clear yearly value of 293L and 139L respectively; and Sneinton, a perpetual curacy of 22L. (Clerical Guide, 1850.)

There were, in 1833, in the three parishes of Nottingham, and in Lenton, 2187 children in schools, with 540 scholars; eight boarding-schools, with 234 children; ninety-five day-schools (in a few of which boarders were also taken), with 4177 children; and fifteen Sunday-schools, with about 7849 children. Among the day-schools in the town are the grammar-school, with a valuable endowment, and 16 scholars; the Blue-Coat School, with 60 boys and 25 girls; a national school, with 537 children; three Lancaster schools, with 484 children; and four other schools wholly or chiefly supported by charitable contributions.
There is a public library and news-room in the market-place: the library consists of about 8000 volumes, besides a valuable collection of old books, kept separate from the rest (Lowes, Top. Dict., 1631), and a ministerial cabinet; in the buildings of this institution are lecture, news, and billiard rooms, and a law library: a literary society meets in the lecture-room. There is a mechanics' institute, established in 1824, which has a considerable library.

Ollerton, a large market town of Edward the Confessor, is in the Hatfield division of Bassetlaw hundred, 137 miles from London by Newark, and 184 miles from Nottingham. The whole parish of Edwinstow has an area of 17,270 acres, with a population of 21,957. The market town of Ollerton, which is the centre of the Ollerton civil parish, has 658 inhabitants, more than a third agricultural. The town is on the banks of the Maun; it has a neat Gothic church of modern erection, a Methodist chapel, and some good inns. A considerable quantity of hair is exported around the one, and a considerable amount of wheat. The market, which is on Friday, is small: there is a hop-market every Tuesday in September, and a yearly cattle and sheep fair. The lining of Edwinstow, united with the three chapels of Ollerton, Palshorpe, and Carburton (all in the parish), is a vicarage, and to the Scotch church was given a glebe-house.

The village of Edwinstow, which is on the Maun, above Ollerton, is extremely rural. The church is a venerable Gothic building, with a lofty spire. There were in the chapel, in 1833, three day-schools, with 95 children, and two Sunday-schools, with 100 children.

Southwell is in that part of the liberty of Southwell and Scrooby which lies between the north and south divisions of Thurgarton hundred, 132 miles from London by Newark, and 114 miles by Nottingham. The statute of 1321, however, declared that there might be an archery in Spalding, and that all archers should be therein. It is likely that there was a Roman station here, or perhaps a fortified outpost of the neighbouring station of Ad Pontem, which antiquaries generally fix on the Trent, not far off. The name 'Burgage' is said to be derived from the Saxon word 'burga', a tower, and the remains of a fosse on the 'Burgage Hill' probably indicate the site of the Roman fort. Several Roman brick have been used in the antient ecclesiastical buildings. A church was established here in the 10th century, and three Sunday-schools, with 408 children, have been reformed and the chapel of the church.

Southwell is a large and magnificent cruciform building, consisting of nave and aisles, choir, transepts, and eastern transepts, two western towers, and a central tower. The nave and transepts and the towers are Norman, of very bold character and well-executed details. The towers are richly ornamented; the central tower, which is very massive, is also Norman. The extreme length of the church is 306 feet, breadth of the nave and aisles 59 feet, breadth at the transepts 121 feet. The choir and eastern transepts are of early English character, and the church was rebuilt in the 14th century. There are some windows, of later insertion, of perpendicular character, particularly a large western window. The arches which support the centre tower, and several of the Norman doors, are fine; and the north porch is a large and muchadmired structure. The Nave is of three bays, round and short; the windows of the triforium are large, and the clerestory windows small, showing circles on the outside and arches with shafts within. The nave and transepts have a wooden flat ceiling; the aisles have a stone groined roof. The early English portions are among the finest specimens of that style in the kingdom, and are in good preservation. The chapter-house is a fine specimen of early decorated, and there is a nave. The nave and transepts have a wooden flat ceiling; the aisles have a stone groined roof. The early English portions are among the finest specimens of that style in the kingdom, and are in good preservation. The chapter-house is a fine specimen of early decorated, and there is a nave.
tured of later styles. The western door is a beautiful Norman composition: at the east end of the present church is the tower, formerly central while the whole of the church was standing. The principal gateway of the priory is yet standing. The church is roofed over it is used as a national school, and there are several other remains of the priory, some of which have been incorporated with or converted into small dwellings-houses. There are Independent, Wesleyan and Primitive Methodist, and Catholic chapels, the latter near the market-place. The village is situated on the main road, 2 or 3 miles south of Nottingham, near the right or west bank of the Lene. The area of the parish is 2720 acres; the population, in 1831, was 6325, about one-tenth agricultural. The village lies in a bottom, amid scenery of the richest character. The church has a beautiful tower and spire. The chief manufactures are those of hosiery, lace, and lace machinery, in which about 750 adult males are employed. There are cotton-mills, dye-houses, and bleaching-grounds, and several corn-mills. The court of the Honour of Feverel sits here; it has jurisdiction over Notting-hamshire, Attenborough, and part of Norfolk. The manufacture of the town are thriving, but a good deal of business is done in matting. The market is on Wednesday, and there are three cattle-fairs, besides a statute fair. The Chesterfield Canal passes near the town; it is carried over the river by a fine aqueduct. The area of the whole parish is a vicarage, of the clear yearly value of 328£, with a glebe-house. There were, in 1831, 6 endowed schools, with 48 boys; seven other day-schools, with 204 children; and seven Sunday-schools, with 366 children.

Besides the above market-towns, there are several villages whose manufacturing industry has raised them to considerable importance. Basford is in the northern division of Broxtow wapentake, 41 miles south-west of Mansfield. The area of the manor including the hamlet of Hucknall under Huthwaite and the extra-parochial district of Fullwood is 6040 acres; the population, in 1831, was 5746, about one-sixth agricultural. The village is situated on the main road, and consists of several streets. The church is north-west of the village; it is of middling size, dedicated to St. Mary. There are places of worship for General or Arminian and Particular or Calvinistic Baptists, Independents, and Methodists. The manufacturing industries include a fulling-mill, cotton-factories, chiefly of hosiery, lace, and lace machinery. There is a pottery for garden-pots and other coarse red ware. The Mansfield and Pinxton Railway passes through the parish. There are lime-kilns and freestone quarries, which employ 25 adult males. Roman antiquities of considerable interest have been found here.

Selston (population 1580), in the north division of Beeston wapentake, an eminent man in the south division, are on the western border of the county. About 100 persons are engaged in the manufacture of hosiery and lace in each parish; and there are extensive coal-works, especially in Eastwood parish. The Mansfield and Perton Railway runs near Selston, and the Nottingham Canal near Eastwood.

At Calverton (population 1196), in the southern division of Thurgarton wapentake, between Nottingham and Selston, and nearly 500 men are engaged in the hosiery and lace manufacture; at Sutton on Trent, in the south division of Shunklefe wapentake, near 100; and at Hucknall Torkard (population 2200), in the northern division of Broxtow wapentake, between Nottingham and Mansfield, upwards of 300.

**Divisions for Ecclesiastical and Legal Purposes**

This county is included in the diocese and ecclesiastical province of York. It forms an archdeaconry composed of the several rural deaneries of Bingham, Newark, New, and the county of Nottingham, and is subdivided into the several archdeaconries mentioned above. The commissioners on the Established Church presented the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and Shunklefe is 80; under the jurisdiction of the archdeaconry of Nottingham and 34 exempt; of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York. In the deanery of England and Wales (a.d. 1813), the number of churches and chapels in the county a. under the archdeaconry of Nottingham and 34 exempt, of which 28 are in the peculiar of S. well, and 6 under the chapter of York.
The county is in the midland circuit: the assizes are held at Nottingham, to which place the judges proceed from Lincoln. The quarter-sessions are held each quarter at Nottingham, Newark, and East Retford. The jurisdiction of the soke of Southwell and Sherbo has been mentioned in our topographical notice of Southwell. Some parishes are in the honour of Tuthbury and subject to the court held there for the recovery of small debts. The court of the borough of Northumbria (apparant) is held over Nottinghamshire and Derbyshire, and some parts adjacent, has been mentioned in our topographical notice of Basford, where the court sits.

The county gaol is at Nottingham: some new buildings have been added. The court house of correction is at Southwell. The number of commitments to these two places of confinement in the years from October, 1834, to October, 1835, and from October, 1835, to October, 1836, were as follows:—1834-5, Nottingham, 60; Southwell, 50. The buildings at Southwell, 908 felon and misdeemans, debtors; Southwell, 550 felon and misdeemans.

The great increase in the number of felons committed to Nottingham in 1835-6, and the decrease in the number of felons committed to Nottingham in 1834-5, is the subject of the arrangements made by the magistrates of the county.

The number of members returned to parliament from Nottinghamshire before the Reform Act was eight, viz., two knights of the shire, who were elected at Nottingham, two for the city, one for the county of Nottingham, one for Newark, and two members returned by the burgesses of East Retford, conjointly with the freeholders of the wapentake of Basstall. The admission of the freeholders below the value of £40 a year, or one of his majesty’s officers, is excluded. The return to parliament passed in consequence of the corruption of the boroughs. By the Reform Act the county was divided, and each division returns two members. The northern division comprehends the wapentakes of Bassetlaw and Broughlaw. The court of quarter is held at Nottingham; and the constituents are Nottingham, Mansfield, and East Retford. The southern division comprehends the wapentakes of Rushcliffe, Bingham, Newark, and Thurgarton; the court of quarter is held at Newark, and the constituents are Rushcliffe, Bingham, and Southwell. The number and distribution of borough members remained unaltered by that act.

History; Antiquities, &c.—In the earliest period of British history the county seems to have been included in the territory of the Catuvi, and retained however very few memorials. There are some vestiges of a camp or fortification on a hill at Barton near the Trent, 4 or 5 miles south-west of Nottingham; and a tumulus or barrow in different parts of the county. It is difficult to say whether these monuments were of British or Roman origin. To these we may add the caves in the sandstone rock at and near Nottingham, already noticed.

In the division of the island by the Romans, the county of Nottinghamshire is included in the northern legionary station. At the time of the Roman stations, Ad Pontem, Margidunum, and Veromun were probably in the county, and Segelocum was probably just out of it on the Lincolnshire side of the Trent, near Littleborough. Ad Pontem was probably on the Trent near Southwell. Horsley was disposed to fix it. At Farndon, a short distance above Newark, and it is probable that he is about right. Margidunum was probably near East Bridgford, on the south bank of the Trent between Nottingham and Newark. There are the undoubted remains of the foundations of Roman buildings observed there by Stukeley. Veromunum is close to the south border of the county near the village of Willoughby. There are some remains of the rampart and ditch behind the foundations of Roman buildings on the north side of the road. There are also remains of the rampart and ditch behind the foundations of some Roman villas at Mansfield Woodhouses in A.D. 1756. The pavement and other antiquities there are several traces. The Foss Way may be traced from Retford for several miles in the direction of Newark.

Many Roman remains have been discovered near Newark, livestock has probably risen from the ruins of some of the neighbouring Roman posts; and coins have been found in several parts of the county. The houses of the Roman villa at Mansfield Woodhouses in A.D. 1756. The pavement and other antiquities found are minutely described by Major Rooke, the discoverer, in the 8th volume of the 'Archæologia.'

In the Saxon period it is likely that Nottingham was possessed at first by the Northumbrian Angles. When Redwald attacked Ethelfrith of Bernicia, when Osred Edwin from the throne of Deira, or Yorkshire, the decisive battle took place in Nottinghamshire on the banks of the Idle (A.D. 617). When the Mercians became independent (A.D. 716), this county was included in their dominion; it was divided between the northern and southern Mercians, who were separated from each other by the Trent.

When the Northmen, under the sons of Ragnar Lothbrok, invaded England, they marched through the county. Shortly after the battle of Hildesheim (A.D. 1035-6), the Normans under the command of William Longsword, who had taken the castle of Bamburg, king of that country. Neither party was able to obtain decisive advantage, they made a treaty by which the Northmen returned to York. A few years after they re-entered Mercia, which they conquered; and by their treaty with Alfred (A.D. 879 or 880) obtained possession of that part which was north-east of Watling Street, of that part which was south-west of Watling Street, by which the Normans were made to pay a large annual tribute, which was to be divided between the Danish burghs, of which Nottingham was one. These burghs were compelled by Edmund I. (A.D. 942) to submit to Wessex, they then seem to have obtained the great respect of their local government, probably till near the time of the Conquest. After the Conquest, the greater part of the country, together with the castle of Nottingham, was bestowed by William the Conqueror on his natural son, William Peverel. The castle of Nottingham was probably garrisoned by the powerful knights of the county, and the town was burnt by the Parisians of the Sims. The town was taken by Robert, earl of Ferrers, a part of the young princes. In the civil war of John's reign, the town was taken by the parliamentary forces under the command of the Earl of Suffolk after a short siege. The town was again besieged in 1644, and the town was burnt, but the citizens were supported by the garrison, who had been provisioned by the parliamentary forces. The town was again besieged in 1644, and the town was burnt, but the citizens were supported by the garrison, who had been provisioned by the parliamentary forces. The town was again besieged in 1644, and the town was burnt, but the citizens were supported by the garrison, who had been provisioned by the parliamentary forces.

In the rebellion of Lambert Simnel (A.D. 1487) the forces under Martin Swart, an experienced officer, and about 6000 half armed Irishmen, were encountered by the royal army under Henry VII. in person, at East Stoke, on the right wing of the Trent, and the town was taken. The besiegers of the castle were few; half of them were slain, including their leader, the Earl of Lincoln and Swart. Simnel was taken prisoner; and Lord Lovel, another leader, escaped from the fray, but was either drowned in his flight across the Trent, or was compelled to conceal himself for the rest of his days. (Curte, Hist. England.)

At the commencement of the civil war of Charles I. the king set up his standard at Nottingham with great ceremony (A.D. 1642). Shortly after this Nottingham came into the hands of the parliament, and continued so to the end of the war. Newark, which was held by a body of Royalists under the command of Sir John Henderson, was besieged (A.D. 1644) by a body of parliamentary forces under Sir John Meldrum and Lord Willoughby of Parham. Sir Rupert, advancing with the parliamentary forces, obtained the surrender of the king's garrison by the rapidity of his march, drove part of their forces over the Trent, and compelled another portion to capitulate, with all their artillery and ammunition. In the winter of 1644-45, and the town was taken. The parliamentary forces, but without success, the garrison having been relieved by Sir Marmaduke Langdale, who was sent by Prince Rupert for that purpose. The troops at Newark, now under Sir Richard Byron, being thus relieved, were of service to the king's cause in this part, beating some parliamentary detachments and keeping their posts in a state of alarm. Among other services, a detachment from this garrison assisted at the storming of Leicester in 1645. Not long after his defeat at Naseby the king returned to this county, and marched northward to Doncaster, with the view of joining Monmouth in Scotland. Upon the arrival of a body...
of Scots horse however at Rotherham, the king retired to Newark, which Sir Marmaduke Langdale had retreated after the battle of Naseby (a.d. 1645). From Newark the king marched to Oxford, but was again at Newark in October of the same year; and it was there that he was deserted by his nephews Rupert and Maurice, and by several of his officers. In November, being pressed by the approach of the Scots under the earl of Leven, and by a body of Parliamentarians under Poyntz from the west, he withdrew to Oxford. Newark was forthwith besieged by the Scots; and in May, 1646, the king surrendered himself at Southwell to the Scotch commissioners, by whom he was conducted to the besiegers' quarters. The day after his arrival Newark was delivered up by his orders. In 1648 Cromwell was in Nottinghamshire with the troops destined to operate the English. Royalists under Sir Marmaduke Langdale and the Scots under the duke of Hamilton. Monk with his army marched through Nottinghamshire, passing through Mansfield, Southwell, and Nottingham in his way southward (a.d. 1660) to restore the king.

Of architectural antiquities Nottinghamshire is somewhat barren, and its ecclesiastical buildings are, with two or three exceptions, such as St. Mary's Church at Nottingham and Southwell Collegiate Church, already described, by no means remarkable for splendour. Balderton, Hovingham, and Mansfield churches have some Norman portions, and Newark church has some slight remains of Norman: the churches of Bingham, Coddington, Hawton near Newark, and Upton St. Peter near Southwell, have considerable portions of early English: Hawton is especially worthy of examination. The framework of its walls and its carvings for the most beautiful is Nowestead. Here was a priory of Black or Austin Canons, founded by Henry ii. about a.d. 1170, whose yearly revenues at the dissolution were estimated at 219l. 16s. 4d. gross, or 167l. 16s. 11d. clear. The rest of the monastic buildings were fitted up as a residence by Sir John Byron, to whom they were granted, but the chapel was allowed to go to decay. Its front is an exceedingly beautiful specimen of early English, scarcely equalled by any other specimen in elegance of composition and delicacy of execution. Of Rufford Abbey, near Ollerton, there are some remains incorporated in a large mansion of later date, which retains the original designation. It was a Cistercian abbey, founded by Gilbert, earl of Lincoln, a.d. 1148; its yearly revenues at the dissolution were 224l. 6s. 4d. gross, or 176l. 11s. 6d. clear. Of Welbeck Abbey the only remains are some of the arches of the vaults and some walls of the superstructure, now incorporated in the mansion of the duke of Portland. The revenues of this abbey for Premonstratensian canons (founded a.d. 1153) were at the dissolution 29l. 15s. 4d. gross, or 249l. 6s. 3d. clear. Part of the cloisters and some other portions of Mattersey Gilbertine Priory, near Idle, yet remain. There are also some remains of Laxton Priory for Austin canons. There is an antique at Newark of a hand cross.

(Thoroton's 'Nottinghamshire, by Throsby; Remains of England and Wales; Conybeare and Phillips, 'Outlines of the Geography of England and Wales; Richardson's 'Architectura; Rastall's 'History of Southwell; Fyffe and 'Progress of the English Commonwealth, by Saxou; Lew's Top. Dictionary; Parliamentary Return.)

**STATISTICS.**

Population.—Nottinghamshire is chiefly a manufacturing county, a large proportion of its population is also engaged in agriculture. In 1831 it ranked 29th on the agricultural counties. Of 56,522 males twenty years of age and upwards, 14,260 were engaged in (1831) manufactures or in making manufacturing machinery, and 16,436 were occupied in agriculture; of this latter number 11,739 were labourers. Most of those engaged in manufacture were engaged in the manufacture of stockings and lace; of these there were Nottingham, 4,740; at Radford, 1,300; at Mansfield, 800; at Sutton-in-Ashfield, nearly 800; at Bassetlaw, 750; at Shenton, 430; at Hucknall-Torkard, at Beeston, Lenton, and at Carlton, upwards of 500 each; at Bubnell, Gresley, and Calverton, about 200 each; at Kirby-in-Ashfield, Mansfield-Woodhouse, Stapleford, Southwell, Lambeck Rodington, and Selston, between 200 and 100 each. Most of the places here named the manufacture of stockings, lace, frame work machinery, and the materials of the lace manufacture, are conjoined or intermingled so as to be distinguishable in a general description. There were 50 weavers at Newark and 19 at Hawton; seeking a market at West Rufford; candle wicks at Gamston. The population of Nottinghamshire, as given at each time the census was taken, was as under:

<table>
<thead>
<tr>
<th>Year</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>68,553</td>
<td>71,792</td>
<td>140,350</td>
</tr>
<tr>
<td>1811</td>
<td>79,057</td>
<td>83,843</td>
<td>162,900</td>
</tr>
<tr>
<td>1821</td>
<td>91,491</td>
<td>95,382</td>
<td>186,873</td>
</tr>
<tr>
<td>1831</td>
<td>110,457</td>
<td>114,870</td>
<td>225,327</td>
</tr>
</tbody>
</table>

showing an increase, between the first and last period of 84,977, or not quite 38 per cent. on the whole population being 19 per cent. below the whole increase in England and Wales.

The following table contains a summary of the population of every hundred, as taken in 1831:

<table>
<thead>
<tr>
<th>HUNDREDS or WAPENTAKES, BOROUGH, &amp;c.</th>
<th>HOUSES</th>
<th>OCCUPATIONS</th>
<th>PERSONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unb.</td>
<td>Families</td>
<td>Unb.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Build.</td>
<td></td>
</tr>
<tr>
<td>Bassclaw —</td>
<td>3,845</td>
<td>4,601 21</td>
<td>96</td>
</tr>
<tr>
<td>Hatfield Division —</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North-Clay Division —</td>
<td>2,109</td>
<td>2,224 6</td>
<td>105</td>
</tr>
<tr>
<td>South-Clay Division —</td>
<td>1,505</td>
<td>1,595 5 32</td>
<td>06</td>
</tr>
<tr>
<td>Bingham-North and South Divisions —</td>
<td>2,394</td>
<td>2,573 13</td>
<td>55</td>
</tr>
<tr>
<td>Chromley North and South Divisions —</td>
<td>1,260</td>
<td>1,268 191</td>
<td>495</td>
</tr>
<tr>
<td>Newark, North and South Divisions —</td>
<td>1,456</td>
<td>1,572 3 37</td>
<td>99</td>
</tr>
<tr>
<td>Rufford and Worksop (Hundre. or Wapent.):</td>
<td>2,187</td>
<td>2,236 5</td>
<td>53</td>
</tr>
<tr>
<td>Newark-upon-Trent (Borough) —</td>
<td>2,022</td>
<td>2,037 9 62</td>
<td>06</td>
</tr>
<tr>
<td>Nottingham (Town and County of the</td>
<td>10,407</td>
<td>10,501 136</td>
<td>435</td>
</tr>
<tr>
<td>Town) —</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals —</td>
<td>44,936</td>
<td>47,117 456</td>
<td>1,701</td>
</tr>
</tbody>
</table>
NOT

County Expenses, Crime, &c.—The sums expended for the relief of the poor at the four dates of

£       s.    d.

1801 were 44,222, being 6 3 for each inhabitant.
1811 58,012 10 9
1821 73,315 7 10
1831 72,717 6 5

The sum expended for the same purpose for the year ending March, 1838, was 55,003L; and if it be assumed that the population had the same rate of increase between the years 1831 and 1838 as it had during the ten years preceding, the above sum gives an average of 4s. 3d. for each inhabitant. These averages are below those for the whole of England and Wales.

The sum raised in Nottinghamshire for poor-rate, county-rate, and other local purposes, in the year ending 25th of March, 1833, was 116,380L, and was levied upon the various descriptions of property as follows:

On land 75,634 14s.
Dwellings, houses, &c. 34,494 0
Mills, factories, &c. 4,782 13
Manorial profits, navigations, &c. 1,469 8

Total 116,380 15

The amount expended was:

For the relief of the poor 27,472 10
In suits of law, removal of paupers, &c. 3,705 11
For other purposes 39,446 1

Total money expended 117,914 2

In the returns made up in subsequent years the descriptions of property assessed are not specified. In the years 1834, 1835, and 1836, there were raised 101,235L 12s. 21d. 1832 12s. 11d. 1831 10s. 11d. 1829 8s. 9d. and the expenditure of each year from 1834 to 1838 was as follows:

1834 1835 1836 1827 1828
£     £     £     £     £
For the relief of the poor 66,035 55,182 50,366 48,268 45,503
In suits of law, removal of paupers, &c. 3,297 2,937 2,029 1,066 1,206
Payments towards the county-rate 21,231 20,276 not given. 19,545
For all other purposes 30,622 13,954 13,048 8,993 6,728

Total money expended £100,531 90,594 86,512 78,570

The saving effected in the whole sum expended in 1838, as compared with that expended in 1834, was therefore 17,961L, or more than 17 per cent.; and the sum expended for the relief of the poor in 1838 was less than that in 1834 by 10,027L, or not quite 17 per cent.

The number of turnpike trusts in Nottinghamshire, as ascended in 1836, under the acts 3 and 4 William IV., c. 80, were 22; the number of miles of road under their charge was 309. The annual income arising from tolls and parish composition in lieu of statute duty, in 1836, was 17,866L; and the annual expenditure in the same year was as follows:

Manual labour 4,894 10
Team labour, and carriage of materials 653 13
Materials for surface repairs 2,203 3
Land purchased 87 12
Damages done in obtaining materials 105 18
Tradesmen’s bills 586 5
Salaries of treasurer, clerk, and surveyor 1,394 6
Law charges 1,369 14
Interest of debt 4,877 4
Improvements 1,147 17
Debts paid off 429 0
Incidental expenses 294 8
Estimated value of statute duty performed 1,235 4

Total expenditure 18,073 4

The county expenditure in 1834, exclusive of that for the relief of the poor, was 15,532L 11s., disbursed as follows:

Ridges, building, repairs, &c. 273 3
Goals, houses of correction, &c., and maintaining prisoners 3,437 12
P. C. No. 1029.

Shire halls, and courts of justice, building, repairing, &c. 2,419 13
Lunatic asylums 915 10
Prosecutions 1,264 14
Clerk of the peace 1,268 18
Conveyance of prisoners before trial 653 16
Conveyance of convicts 217 17
Vagrants, apprehending and conveying 264 19
Constables, high and special 151 10
Coroner 264 5
Debt, payment of, principal and interest 1,685 0
Miscellaneous 2,274 9

Total expenditure 15,232 11

The number of persons charged with criminal offences in the three septennial periods ending with 1820, 1827, and 1834, were 1227, 1657, and 2255 respectively, making an average of 175 annually in the first period, of 237 in the second period, and of 322 in the third period. The number of persons tried at quarter-sessions in each of the years 1831, 1832, and 1833, in respect to which any costs were paid out of the county rates, were 103, 108, and 98 respectively. Among the persons charged with offences there were committed for:

1831. 1832. 1833.
Felonies 95 95 95
Misdemeanors 8 4 5

The total number of committals in each of the same years was 123, 97, and 98 respectively.

The number convicted was 101 12 1 11
Acquitted 18 8 12
Discharged by proclamation 7 5 4

There were 250 persons charged with crimes at the assizes and sessions in Nottinghamshire in 1828. Of these 9 were charged with offences against the person, only 1 of which was a common assault; 21 were charged with offences against property committed with violence; 2 with offences against property committed without violence; none were charged with malicious offences; and 4 were charged with various misdemeanors.

Of the whole number committed, 292 were convicted, 33 were acquitted, 2 were not prosecuted, and no bill was found against 13. Of those convicted, 1 was sentenced to death, and had his punishment commuted to one year’s imprisonment; 54 were transported for various periods; 18 were imprisoned for one year; and 127 for six months or under; 1 was fined. Of the whole number of offenders, 217 were males and 33 females; 80 could neither read nor write; 145 could read and write imperfectly; 20 could read and write well; one had received superior instruction; and the degree of instruction of the remaining 4 could not be ascertained.

The number of persons registered to vote for county numbers in 1837 was 7010. Of these, 4419 were freeholders, 67 leaseholders, 477 copyholders, 198 occupying tenants, 67 trustees, and 2 mortgagees: being in 92 of the whole population, and 1 in 8 of the male population twenty years of age and upwards, as taken in 1831.

Nottinghamshire contains six savings’ banks: the number of depositors and amount of deposits on the 20th of November, in each of the following years were as under:

1836. 1837. 1838.
Number of depositors 1978 2197 2725
Amount of deposits 4235645 4325626 4205885 4271075

The various sums in the savings’ banks in 1836, 1837, and 1838, were distributed as under:

<table>
<thead>
<tr>
<th>Year</th>
<th>Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1836</td>
<td>4235645</td>
</tr>
<tr>
<td>1837</td>
<td>4325626</td>
</tr>
<tr>
<td>1838</td>
<td>4205885</td>
</tr>
</tbody>
</table>

Education.—The following summary is taken from the Parliamentary Returns on Education made in the session of 1835.

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of which they are composed, they are capable of classification in all languages. The nature of this classification may be explained from examples in our own language. Many nouns are simple roots, as *horse*, *skip*, *swim*, *brow*; while others are formed by adding suffixes to the root or other words. [Norton, Nottoway.]

The following list of nouns, formed by suffixes, belong to the Saxon part of our language. A few examples of each suffix are given in order to show the use of each suffix more clearly.

- **Er.**
- **Ster.**
- **Ard.**
- **Eur.**

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>build-er</td>
<td>game-ster</td>
<td>drunkard</td>
</tr>
<tr>
<td>box-er</td>
<td>malt-ster</td>
<td>slurred</td>
</tr>
<tr>
<td>walk-er</td>
<td>song-ster</td>
<td>saved</td>
</tr>
<tr>
<td>scoff-er</td>
<td>pun-ster</td>
<td>blinkerd</td>
</tr>
</tbody>
</table>

Some of the words in *er, ster, ard* have a corresponding feminine termination in *ess, ess, ess*, as *hardness, correctness, effectiveness*. The termination *ess* is of Latin origin.

**Ling.**

- **Kin.**
- **Let.**

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>fat-ling</td>
<td>lamb-kin</td>
<td>rivu-lat</td>
</tr>
<tr>
<td>first-ling</td>
<td>pump-kin</td>
<td>cutlet</td>
</tr>
<tr>
<td>dar-ling</td>
<td>(dear-ling)</td>
<td>pip-kim</td>
</tr>
<tr>
<td>for-skin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These three terminations generally, but not always, *er to the root the notion of smallness, and hence they belong to the class called diminutives.*

**Dom.**

- **Hood.**
- **Ness.**

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>king-dom</td>
<td>boy-hood</td>
<td>badness</td>
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<tr>
<td>wis-dom</td>
<td>child-boo</td>
<td>base</td>
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<td>prono-dom</td>
<td>false-boo</td>
<td>coldness</td>
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<td>the-dom</td>
<td>man-boo</td>
<td>darkness</td>
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**Ship.**

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<td>Th (from adjectives, with <em>T</em> (mostly past a change in the vowel).</td>
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<td>friend-ship</td>
<td>length-ship</td>
<td>gut</td>
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<td>hard-ship</td>
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<td>partner-ship</td>
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<td>crit-ship</td>
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The following terminations are of Latin and Greek origin, though most of them seem to have come through the Norman portion of our language.

**Acy.**

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<td>pag-ancy</td>
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<td>full-acy</td>
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<td>supreem-acy</td>
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<td>respet-ency</td>
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**Ary.**

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<td>advocate-ance</td>
<td>conse-ance</td>
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<td>lumin-ary</td>
<td>potent-ance</td>
<td>consequ-ance</td>
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<td>emiss-ary</td>
<td>prime-ance</td>
<td>impotent-ance</td>
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<td>lib-ary</td>
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<td>bapt-ist</td>
<td>allure-ment</td>
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<td>bapt-ism</td>
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**Ori.**

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The preceding list contains the majority of the terminations of nouns in the English language which are of simple roots. The number, case, and gender of nouns are explained in the articles **Number, Ablative, and Accusative Case.**

**MOUREDIN** (Moulak-el-Abed, Nour-ed-din, Malwood), one of the most celebrated and powerful of the Moslem rulers of Syria in the age of the Crusades, was A.D. 1117, A.H. 511, was a younger son of **Abou-edd.**

**Noun (Grammar),** the name of one of the parts of speech into which grammarians have distributed the words of a language. The noun generally expresses the subject of discourse, or the name (nomes) of the thing spoken of, as *horse, table, darkness,* &c.; but it may also be used as the predicate, as in the sentence, 'This is a metal,' where both 'tin' and 'metal' are nouns.

So far as respects the form of nouns, that is the sounds...
Zenghi, the second of the dynasty of the Atabeks of Irak an Syria. At the death of his father, who was murdered by his own Mamlukes at the siege of Jabbar, A.D. 1146, A.H. 541,* Noor-ed-deen, hastening to Aleppo with the signet of the deceased prince, presented himself to the possession of his father's Syrian dominions; while Mesopotamia, with Moossaool for a capital, fell to the lot of the elder brother Self-ed-deen; and the feeble attempts of Alp-Arsalan, a prince of the house of Seljuk, to assert his claim to the dominions of these Christian princes, were easily frustrated by the combined power of the two brothers. The earliest exploits of the reign of Noor-ed-deen were in continuance of the Holy War which his father had assiduously waged against the Christian inhabitants, at the siege of the city of Ed-tenay, whose capital of Edessa had been taken by Zenghi a few years previous, was signally repulsed in an attempt to recover it, and the Christian inhabitants, who had sided the enterprise, were put to the sword without sparing; and on command of Noor-ed-deen, who even levelled the fortifications of the town to prevent its ever again becoming a bulwark to the kingdom of Jerusalem. The recovery of this important fortress was the avowed object of the second crusade, undertaken A.D. 1148, under Louis VII of France and the emperor Conrad; but of the mighty hosts which led from Europe, only a miserable and dispirited remnant escaped the arrows of the Seljuk Turks in their march through Anatolia to Palestine; the project of retaking the city of Damascus, by the Moslem saves, which was attacked by the crusading monarchs in conjunction with Baldwin III of Jerusalem (Baldwin III.), was foiled when on the eve of success by the address with which the minister of the Moslem sultans conducted the the mutual jealousies of the Christian leaders; and this vast armament, which if properly directed might have overthrown the rising power of Noor-ed-deen, only served by its failure to extend and confirm it. Resuming the offensive immediately the disbandment of the crusades, invaded the territory of Antioch, and in a pitched battle (June 27, 1149) routed and slew the prince Raymond, whose head was sent as a trophy to the caliph at Bagdad; and though he sustained a severe defeat seven years from his anterior victory of the Courtenay, who surprised his camp, this disgrace was amply compensated by the captivity of that active leader, who was soon after seized while hunting by a marauding party of Turkomans, and died in confinement, while the remaining dependencies of Edessa, the fortresses of Antioch, Tellbasser, Rayfin, and, etc., fell almost without resistance into the power of Noor-ed-deen, whose dominions now included the whole of Northern Syria. Mowdiir-ed-deen was still the nominal ruler of Damascus, and also possessed the upper portion of the citadel of the capital; but his government was entirely in the hands of his vizier Moin-ed-deen Anar, whose daughter Noor-ed-deen had married; and after the death of this able minister, the inhabitants, alarmed at the capture of Antioch by Baldwin III. in 1153, sent deputations demanding the surrender of the city; and those of the women, who offered their allegiance to Noor-ed-deen (1154) as the price of his protection; the weak Mowdiir-ed-deen resigned his power, and sought an asylum at the court of the caliph of Bagdad, which then seems to have been the usual retreat of dethroned princes; while Noor-ed-deen, the circuit of whose realms now encompassed on all sides by the land the Latin territories in Palestine, and extended to the frontiers of the Fatimite possessions in Egypt, fixed his capital at Damascus, whose position he raised from its ancient unimportant state in which it had been left by the Persians, and adorned with mosques, fountains, colleges, and hospitals. Several years of continual but varied warfare against the Christians followed the union of all the Moslem power of Syria under a single head; the sway of Noor-ed-deen was unopposed, and was unqualified by acquisitions, not only from the enemies of Islam, but from the sultan of Iconium and the minor Moslem princes of Mesopotamia; but a malady which attacked him in 1159, followed by a false report that he died, caused a signal reverse in his fortunes, but for the prudence of Ayyob (the father of the famous Salah-ed-deen, or Saladin), who controlled the impatience of his brother Assed-ed-deen Shifrahok to take advantage of the supposed decease of their patron. The Greek emperor Manuel Comnenus was at this time preparing a great armament to march to the aid in concert with the Franks of Antioch; but this new expedition was diverted by negotiation, and by the release of 6000 Greek captives; and the only advantage reaped by the Christians from this crisis was the capture of the fortress of Al-Harem in the hands of Baldwin, and the construction of the fort of Noor-ed-deen from the abelst of his antagonists, his brother and successor, Almaric, or Amaury, being far inferior to Baldwin both in prowess and abilities; the war however was prosecuted with unabated vigour and various success; on one occasion of the siege of Harem, Al-Akbar (elie of the Koords), the Moslem leaguer was surprised by the Templars, and their monarch himself escaped death or captivity only by the self-devotion of an attendant; but this discomfiture was speedily retrieved by a victory in which Marshal de Chatillon, prince of Antioch, was taken prisoner, and which was followed by the recapture of Al-Harem. But the state of affairs in Egypt, where the Fatimite caliphate was now tottering to its fall (Fatimides), opened new views of aggrandisement and a wider field of ambition to both the Christian and Moslem rulers of Syria; the descendants of Ali had become puppets in the hands of their vizier, or Emir Al-Joyush (generalissimo), who wielded all the real authority in that state; two princes, Darnag and Qarakhan, each tested in arms this high dignity; and the latter, defeated and expelled from Egypt, sought refuge and aid from Noor-ed-deen. The sovereignty of Damascus eagerly embraced the opportunity of obtaining a footing in Egypt, and de- ed-deen to re-establish his power. But Shawer, faithless alie to friend and foe, now entered into arrangements with the Franks in order to elude the fulfilment of his engagements with Noor-ed-deen; and Shifrahok, after maintaining himself for some time in Belbeis against the joint forces of Al-Kalaf and of Saladin, was compelled to enter into a convention with Amaury and evacuate the country. But he was soon recalled by Shawer to deliver him from the vengeance of his new allies, to whom he had proved as perfidious as to those of his own faith; Cairo was closely besieged by the Franks, and the Fatimite caliph Adel Ledim'lla sent the hair of his women, the extreme symbol of Oriental distress, to implore the succours of Noor-ed-deen (1168). Shifrahok again entered Egypt with an army of 7000 horse; the force of Amaury was overpowered and driven; and the dual traitor Shawer, installed himself in the twofold office of vizier to the Fatimite caliph, and lieutenant of Egypt in the name of Noor-ed-deen; but dying the same year, was succeeded in his dignities by his famous nephew Salah-ed-deen. [1168-1193.]

While these events were passing in Egypt, Noor-ed-deen in person pushed his successes in Syria against the Chris- tiana, from whom he took Panas and many other important places; Mesopotamia, ruled by his nephew, acknowledged his supremacy as head of the family; he was now, by his officers, absolute master of Egypt, and the fleets of Damieta and Alexandria were directed against the sea-coast of the kingdom of Jerusalem; but a religious conquest was yet wanting to complete his triumph; and in order to see the orthodoxy of the orthodox or Sooni sect of Islam, he reverence the Abbaside caliph of Bagdad as the legitimate commander of the faithful; and the schismatic caliphate of the Fatimites, of which a phantom still remained seceded in the palace of Cairo, was an abhorrence, which he was determined to extin- uish. In obedience to his repeated commands, Salah-ed- deen (A.D. 1171; A.H. 557) substituted the name of the Abbaside caliph Mostadhi in the public prayers for that of Ader, who died early, in the absence of his deposition; the Sheah hereby was for ever abrogated in Egypt, and Noor-ed-deen, as the champion of orthodoxy, received from the gratitude of Mostadhi the direct investi- ture of Egypt and Syria as fiefs of the caliphate; two swords were given to those of his brothers who had taken part of his sway over two kingdoms; and he exchanged the title of emir, or sash, for the higher appellation of sultan, which the title of that age conceived to be attached to an im- mediate grant from the head of the Moslem faith, Sal-ad deen, the son of Ader, was raised to the rank of sultan; and the official style of the sultan, as Abyb, and the sultan of Saladin, or Salah-ed-deen became official, was thus established.
throughout his dominions, and even in the holy cities of Mecca and Medina, which Tooran-shah, brother of Salath-ed-deen, had reduced as dependencies of Egypt; but the power and glory of Nour-ed-deen had now attained their highest pitch of the three remaining years of his life were unmarred by any memorable achievement, and disquieted by forebodings of the future downfall of his house by the ambition of Salath-ed-deen, who, though still ostensibly acting as his lieutenant, and making public professions of loyalty and obedience, had in fact become independent master of Egypt, and eluded or disregarded all the orders of his nominal sovereign. The reluctance of Salath-ed-deen to join his forces with those of Nour-ed-deen in an expedition which the latter had planned against the fortress of Kasr or Mont-Royal, at length brought these smouldering jealousies to the verge of an open rupture; and Nour-ed-deen was preparing to march into Egypt to reduce or expel his refractory vassal, when an attack of quinsy terminated his life at Damascus on May 26, 1173 (Shawal 21, 569). His son Malek-al-Salath Ismail, a youth eleven years old, succeeded to the titular sovereignty of his extensive dominions; but was speedily stripped by Salath-ed-deen of Damascus and the greater part of Syria, and died eight years afterwards, reduced to the sovereignty of Aleppo and its dependencies, which were then absorbed, after an ineffectual attempt to claim them on the part of his cousins, the atabeks of Moosool, into the wide spread realm of Salath-ed-deen is described by Abulfeda, and well proportioned in person, of olive complexion, and with little or no beard; in the estimate of his character he has had the rare good fortune to unite the suffrages of his adversaries to those of his friends. Al-Kamil (Gesta Dei et R. Franc. II) describes Noradin as "a most discreet man, who feared God according to the faith of his people," and the eulogies of the Moslem writers prove that the titles of Malek-al-Adel (the just prince) and Nour-ed-deen of Faith, were not idle or groundless assumptions. With the constant practice of the two princely virtues most esteemed in the East, justice and liberality, he combined the strictest attention to the duties prescribed by his faith; and while wearing neither silk nor gold, nor perfumes or costly garments, he was rich in the sense which was his just share of the spoil, he distributed every month 4000 dinars among the poor, and munificently maintained the hospitals and charitable foundations throughout his dominions. The Dar-al-Adl, or chamber of justice, which he established to control the excesses of his turbulent chiefs and their retainers, was the terror of the great and the refuge of the poor; and such was the affection which his subjects bore to his memory, that, some years after his death, an attempt was made to involve him in the crimes of Damascus and an oppressed sultan, who thus obtained from the reigning monarch the redress which had been previously denied him. Abulfeda sums up his character by declaring that his virtues were both too numerous and too splendid to be contained in the limits of a life or history; and his sentence of future ages, which has placed him among the number of the Moslem saints, has ratified the judgment of his contemporaries. (Abulfeda; Abul-Faraj; De Guignes, Histoire des Huns; D'Herbelot, Bibliotheq. Orient.; Von Hammer, Hist. of the Assassins.)

NOUREDIN (Malek-al-Afadl Nour-ed-deen Ali), the eldest of the seventeen sons of Salath-ed-deen; born A.D. 1170, A.H. 565. In the partition of his father's extensive dominions, he was accorded the provinces of Southern Syria with Palestine fell to the lot of Nour-ed-deen; but in the disembarkations which soon followed, he was stripped of his kingdom by his uncle, Seif-ed-deen of Abubeber (the Saphadin of Christian writers), and his brother Othman, the new sultan of Egypt (1186). In a speech delivered to the people of Damascus, Nasser, he lamented the similarity of his own fate to that of the caliph Ali Ibn Aba-Talib (his namesake) in being thus excluded from his rights by Abubeber and Othman; the caliph congratulated his death in 1125, Damascus, and also said he should find the Nasser (protector) whom Ali had sought in vain; but the intercession of the caliph was unavailing to procure the restitution of any part of his territories; in 1198 however, on the death of his brother, the sultan of Egypt, Nour-ed-deen became atabek, or guardian, to his infant nephew Malek-al-Mansur, and attempted, by the aid of another brother, the sultan of Aleppo, to recover Damascus from his uncle; but the expedition failed, and Seif-ed-deen retaliated by invading Egypt, and expelled both the young sultan and his guardian. The unfortunate Nour-ed-deen now retired to Samosata, where he died, apparently without issue, A.D. 1224, A.H. 621. He is generally mentioned by Eastern writers under his assumed title of Malek-al-Afadl (the excellent prince).
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communication between the Bay of Fundy and Halifax has been established for ships drawing not more than eight feet of water.

The climate is colder than that of England, but it varies considerably in the different parts of the country. Along the southern and western coast there are several harbours which are never frozen; but the harbour of Pictou, on the Northumberland Strait, is usually closed by ice for four months in the year. In Argyle Bay, at the western extremity of the peninsula, the thermometer sometimes sinks to zero, and in summer, it rises, though rarely, above 60°; yet the mean annual temperature is stated to be 48°, or only two degrees below that of London. Along the northern coast however the frost generally continues from the end of December to the beginning of April, and sometimes longer; and during this time there are very heavy falls of snow.

The spring, as in the northern countries of Europe, is very short. As soon as the frost and snow disappear, the country is clothed with a vigorous vegetation, and the heat becomes sensible, though it is never oppressive, even in August, when it is greatest. The autumn is the finest portion of the year, on account of the mildness of the weather and the moderate temperature. In November or December the rains set in; these months and April are the most rainy part of the year, but in general the quantity of rain which falls is moderate. Frogs prevail on the southern shores and along the Bay of Fundy in June, July, and August, but they do not extend far inland. The climate is everywhere very healthy.

**Productions.**—Wheat is grown on the better lands, but if not cultivated with care it does not succeed. The quantity grown is not sufficient for the consumption of the colony, and a considerable quantity of flour is imported. Indian corn is extensively cultivated along the Bay of Fundy, though it is not much used as an article of food. Rye, oats, and barley are raised. Turnips, beets, and buckwheat are also generally cultivated. As the cattle are housed in winter, the culture of grasses is one of the principal objects of agriculture. There are extensive orchards along the Bay of Fundy and its tributaries, by which summer fruit and the cider, which forms a considerable article of export, is inferior to none in America. Peaches and grapes ripen in ordinary seasons without any artificial aid.

Cattle and sheep are very numerous, especially in the country about the Basin of Mines and along the northern shores. Beef and butter make a considerable article of export. The fleece of the sheep, which is tolerably fine, is used for domestic purposes. Horses are not numerous, and the woolly sheep probably numerous.

The forests are one of the sources of the wealth of the country; they consist of pine, birch, oak, hemlock, beech, ash, maple, and elm, all of which make articles of exportation: there are other trees of great beauty, but little value. There are many fine fur-bearing beasts, bear, tiger-owls, martens, otter, mink, beaver, musk-rat, porcupine, racoon, weasel, squirrel, and hare; all of which, except the two last, have decreased very rapidly in number. The lakes and rivers abound with fish, and the sea along the coast contains abundance of cod, mackerel, herring, sad, alewives, salmon, halibut, sturgeon, sole, and some other fish of less value; lobster, oysters, and different kinds of shell-fish are abundant.

Perhaps one-third of the population subsists on the produce of the forests, which are carried on along the shores and on the coast of Labrador.

The eastern portion of Nova Scotia is very rich in minerals. Coal has been discovered at least in ten places between the islands of Chignecto and Margog both of which have a large bed of coal and the great coal-field of Pictou occupies an area of more than one hundred square miles; the seams vary in thickness from one to fifty feet; the seam at the Albion coal-mine is more than fifty feet in thickness; it consists of several distinct layers, the lower main layer being generally the thickest. Great quantities of coal are shipped from Pictou to the United States for the use of steam-vessels. Iron-ore abounds in the same district, but it is not worked; it is also found in abundance in the vicinity of the Annapolis valley, the bed of which rises from the sea to a height of 1,000 feet. Where the mining is carried on it is worked by the Annapolis Iron Mining Company; the ore is very good. Indications of copper and lead occur along Northumberland Strait. Above 100,000 tons of gypsum are annually shipped to the United States for manure; it occurs in several places, and is extensively worked on the shores of the Basin of Mines, Cumberland Basin, and St. George's Bay. Salt-springs are numerous in the north-western district, west of a line drawn from the extremity of the Basin of Colchester Bay to Pictou. Slate, mica, and grist-stones are worked in several places, principally for domestic use; grist-stones are annually exported to the amount of 10,000l. to the United States.

**Diseases.**—The population of the peninsula of Nova Scotia, which amounted to 84,912, had increased to 123,848 in 1827, since which year no census has been taken: this increase was equal to rather more than 40 per cent. annually, some part of which was caused by immigration from the United States and Canada, but along the northern coast however the frost generally continues from the end of December to the beginning of April, and sometimes longer; and during this time there are very heavy falls of snow.

The number of births in the year 1827 was 4,693, or 1 in 27; the number of marriages was 945, or 1 in 131, and of deaths 1,068, or 1 in 65, which last proportion, if the registers are correctly kept, indicates great salubrity in the district.

The population of the colony is of a mixed character. It consists of four distinct classes: the Indians, or aborigines,—people of the tribe of Mi'mees—who do not exceed 600 a number; free negroes, of whom there are about 2,000; Acadians, descendants of the refugees from the former British province of North America, and emigrants from all parts of the United Kingdom, but more especially from Scotland. The Acadians are Roman Catholics; they settle together as much as possible, preserve their language, and are never intermingled with their Protestant neighbours: the descendants of the other nations are so mixed together that all distinctive characteristics are lost.

Acadia was the name given to Nova Scotia and the adjacent countries when they were under the dominion of France.

The province is divided into nine counties, counties of the island of Cape Breton, which is included within the government. These counties, which have already been mentioned, are subdivided into 43 townships, which are not all of equal extent; their inhabitants meet together to authorize the raising of money for local purposes.

Halifax, the capital of the province, in 44° 49' N. and 63° 28' W. long., is built on the declivity of a hill, the summit of which is 240 feet above the sea. It stands on the western side of the harbour, which is spacious, safe, and accessible at all seasons of the year. There is space within it for 1,000 vessels to ride in safety. It is entered by a great arch, and contains 2 churches, 1 Roman Catholic church, and 4 chapels for Protestant dissenters. The Province Buildings, in the centre of the town, is a handsome well-built edifice of freestone, 140 feet long, 70 feet wide, and 42 feet high. It contains the chambers of meeting for the legislative bodies, the custom-house, and the offices of the provincial govern
man, and the superior law courts. The court-house, in which the courts of Common Pleas and the Sessions of the peace are held, is a plain brick building. It contains an exchange-room for the merchants. Halifax is the principal naval station in British America, and in time of war its possession is of great importance: it contains a well-appointed naval arsenal. At the last census, in 1827, the town contained 13,580 houses; since that time it has been much increased. It is the seat of government for the province, and contains a considerable trade with the United Kingdom, the West India Colonies, and the United States. The post-office packets which convey the correspondence between Europe and British America arrive at Halifax from England for the United States.

Opposite to Halifax, on the eastern side of the harbour, is the small town of Dartmouth; it was a thriving place during the war, but has not increased since. A steam-boat is constantly employed for the conveyance of passengers from one town to the other.

Truro, a town containing about 100 houses, mostly built of wood, stands at the head of the Basin of Mines. It contains a church and a court-house, and returns one member to the House of Assembly.

Pictou, on the Strait of Northumberland, opposite to Prince Edward's Island, contains a population above 3000. There are an Episcopalian, a Catholic, and two Presbyterian churches. A considerable trade is carried on in lumber and coal. A vessel has entered its harbour for timber for England in a single year. The harbour has a broad entrance, but within it is capacious, and has from 5 to 9 fathoms of water.

Dorchester is situated about 3 miles above the navigation on Annapolis river. It has a considerable trade in trade in connection to its size, and contains a church-house, a Baptist, a Presbyterian, and a Roman Catholic chapel.

Gyushborough stands on the western side of Milford Haven, at the head of Chedabucto Bay. It contains a court-house, an Episcopalian church, Roman Catholic and Protestant Dissenters' chapels.

Amherst stands near the isthmus which divides the Bay of Fundy from Northumberland Strait. It is a small but thriving town.

Windsor, the county town of Hants, stands at the confluence of the St. Croix and the Avon, about 40 miles north from Halifax. It contains a college, an academy, an Episcopal church, a Roman Catholic chapel, and places of worship for many sects of Protestant Dissenters. Chester is a thriving town on the north side of Mahon Bay, about 9 miles from its entrance. It contains several saws, grist, and fulling mills, and carries on a considerable lumber trade. Many of its inhabitants are engaged in the fisheries.

Lunenburg, a regularly built town, contains about 300 houses and four churches and chapels. It carries on the fur trade with the West India Colonies.

Bathurst, a town about 2 miles above the county capital, is well built. It stands on the west side of the harbour. The inhabitants are mostly engaged in the lumber trade and fisheries, which afford exports to Europe and the West Indies. Liverpool harbour is never frozen, and is accessible at all seasons of the year.

Annapolis, the county town of the county of the same name, stands on a peninsula which projects into the Gut of Digby. It has not advanced in size or population for many years. Androscoggin was the capital of the province under the French, who called it Port Royal. It continued to be the seat of government until 1750, when Halifax became the capital of the province.

Shelburne, in the county of that name, was built by American loyalists immediately after the recognition of the independence of the United States. Within a year after it was founded, the town is said to have contained 13,000 inhabitants, but it soon began to decline, and is now almost deserted. The town stands at the northern extremity of an island, to which a bridge over the strait has been built. The inhabitants that remain are employed in fishing and ship-building.

Yarmouth, also in Shelburne county, on the west coast of the island, is a small town, but a cargo and consists of the street nearly two miles long, but the dwellings are not placed close together.

The affairs of the province are administered by a lieutenant-governor, subordinate to the governor-general of British North America, a council of 12 members appointed by the crown, and a house of assembly, consisting of 41 members, elected by forty-shilling freeholders. The assembly is elected for seven years, but may be dissolved or prorogued at the pleasure of the lieutenant-governor: it must meet every year.

The bishop of Nova Scotia and the chief justice of the province are ex-officio members of the council: the latter acts as its president. The laws are administered by a court of common pleas, held at Sydney, and by district courts, as in the provinces of Canada.

The common and statute law of England are in force, together with the statutes passed by the provincial parliament, and allowed by the queen in council.

The militia of the province, in 1836, comprised 1063 commissioned officers and 22,488 non-commissioned officers and privates.

The exports of the province consist principally of lumber and the produce of the fisheries. Of the first description of produce there were shipped, in 1836, of pine, birch, and ash timber, masts, deals, shingles, and staves, to the value of 115,820l. and the shipments of cod, herrings, mackerel, salmon, and fish oil, amounted to 186,906l. In the same year there were exported 31,489 tons of gypsum, 42,587 tons of coal, and agricultural produce, valued at 26,063l. The total value of exports was 446,097l. The imports, which consisted principally of British manufactured goods, amounted in value to 735,540l. Included in this amount were 16,000 bushels of salt, and agricultural produce, valued at 56,555l.

The shipping that entered and cleared from the province in 1836 was:

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<tr>
<th>Shipments</th>
<th>Outwards</th>
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<td>Ships</td>
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<td>Great Britain</td>
<td>106</td>
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<td>British Colonies</td>
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<td>United States</td>
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<td>Foreign States</td>
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( McGregor's British America; Bouchette, British Dominions in North America.

NOVA ZEMBLA, a corruption of the Russian name of Novaia Zemlia (new land), designates an island situated in the Arctic Ocean, between 70° and 76° N. lat. and 22° and 66° E. long. It extends in length from south-southwest to north-north-east nearly 400 miles, but its width, so far as it is known, does not exceed 50 miles on an average, though in our maps it still occupies double that extent from west to east. It is divided from the island of Waigats, which lies further south, by the Strait of Kara, which is more than 30 miles wide. It consists of several islands; at least it is known that between 73° and 74° N. lat. a strait, called Matoticklin Shor, divides it into two islands, and it is very probable that some inlets, farther north, are likewise straits; but it has hitherto been impossible to advance far into them, since even in the midst of summer they are closed with ice. The island south of the Matoticklin Shor has been recently surveyed by Russian seamen, but more than one-half of the eastern coast of the island north of the strait has been found so closely beset with ice, as to prevent all further progress. The western coast, up to Cape Nassaau, the most northern point of the island, is known. It appears that the wide arm of the sea which lies between Novaia Zemlia and the extensive headland separating the Bay of Kara from the wide gulf into which the Oby river flows, is always encumbered in its northern part with close masses and fields of ice. No vessel, and not even a boat, has yet succeeded in making its way to the east far enough to reach the gulf of the Oby.

The land on the western side of the island is mountainous, rising from a steep and bold shore to the height of 1000 and 2000 feet. The highest mountains are near the western entrance of the Matoticklin Shor, where several summits rise more than 2000 feet above sea-level. The principal elevated mountain is on the strait itself, and is 3475 feet high. The eastern shores are comparatively level, especially towards the south. Though the heat in summer is very great, owing to the long continuance of sunshine, and the horizon (four months and a half at the northern extremity), the soil thaws only to the depth of between six inches and two feet and a half, and at that distance from the surface ice is always found. The vegetation, which
covers some parts of the surface, consists only of lichens and mosses. White bears, foxes, walruses or morses, and seals abound, as well as rein-deer and water-fowl. The islands are frequently visited by fishermen from Arkangel and other towns in order to take the way to and from Novaya Zemlya. The isle became known by the voyage of Stephen Borough (1596), but had previously been visited by the Russians. The Dutchman, William Barents, passed the winters of 1596-7 in Iey Haven, near the most northern point of this island. The government of this island, which in recent times has sent several expeditions to the islands, as already observed, but they have not yet completely succeeded in this object. (Barrow's Chronological History of Voyages into the Northern parts of the World, London, 1836, vol. i. 4th ed., 1848.)

NOVALIS / NA (Benson), the name of a connoisseur belonging to the Solen family. [SOLNÉM.]

NOVALIS, the literary name assumed by Friedrich von Hardenberg, who was born in 1772, at a family estate in Mansfeld. His father, Baron von Hardenberg, had been a soldier in his youth, and was director of the Saxon salt-works. Himself and his wife, the mother of Novalis, belonged to the religious society of Hermibuters. Novalis was the eldest of eleven children, and was very delicate in his earlier years. He was of a dreamy nature, and displayed no extraordinary talent, till a dangerous illness, which attacked him in his ninth year, and could only be cured by painful remedies, awoke him from a kind of intellectual stupor, and caused him to resemble as a little child. His diligence was great, and in his twelfth year he possessed considerable knowledge of the Latin and some acquaintance with the Greek language. He displayed a great predilection for tales (Märchen), and was the owner of some of which he published for the amusement of his brothers. In 1789 he attended a gymnasium, and in the following year went to study at Jena, where he remained till 1792, when he went with his brother Erasmus to the university of Leipzig. In the succeeding year he removed to Wittenberg, where his studies were completed.

At this time he became acquainted with Frederic Schlegel, and also with Fichte, whose system of philosophy, called the Wissenschaftslehre, he studied with great fervour. On his return to Wittenberg he went to Arnstadt, to attend for the first time to practical business. He soon became acquainted with a neighbouring lady, called by his biographer Sophia von K. of whom he became violently enamoured. In 1795 he went to Weissenfels, and was made auditor of the department of which his father was director. The death of Sophia and of his brother Erasmus, both in the year 1797, was a great shock to Novalis; he however pursued his business with activity, and it is about this time that his 'Hymns to Night,' a series of short poems, which as a whole forms a sort of autobiography, was written.

In 1798 he was betrothed to a lady called Julia von Ch., and about this time he wrote his 'Pupils at Sais.'

Returning to Jena, he became acquainted with August Wilhelm Schlegel, and with Tieck, who became the only friend of his. They wrote in romance, and Novalis was the author of the biography to which we are indebted for all the information that we have respecting the life of Novalis. In 1800 the romance 'Heinrich von Ofterdingen' was commenced by Novalis, and was, as he explains in a letter to his friend Tieck, designed to be an apologia for poesy. This singular work was never finished, although the plan of its conclusion is preserved. The hero, Heinrich, is an old German poet, supposed by some to be the author of the 'Nibelungenlied,' and the purpose of the work was to explore the world of romance with every profession and pursuit, on its poetical side. It would little suit most romance readers, as the story is too wild to be interesting, and is merely a thread to connect the author's own thoughts and opinions. The conclusion of the work, as given by rough notes, was to have been eccentric even for a German enthusiast. Heinrich was to have come into a land where men, beasts, minerals, and even tones and colours held converse, where the world of nature (Marchenthal) was to become visible, and the real world to be considered a tale. It may be observed that Novalis regarded the Marchen, or popular traditions, with singular respect, and discerned in them, or fancied he discerned, a deep meaning. He was accustomed, says his biographer, to see in the most ordinary objects and things as a miracle, and the supernatural as something ordinary.

In 1800 he was subject to spitting blood, and fell into a weak state. The books which he then constantly studied were the Bible, and the works of Zinzendorf and Lavater. He loved to talk of all his projected works, and professed that he now for the first time knew what poesy was, and designed to write 'Ofterdingen.' On the 19th March, 1801, he died, in the presence of his friend Frederic Schlegel, before he had completed his 29th year. Novalis, who will either be read with some degree of enthusiasm or not read at all. Hence while almost idolised by the partisans of the romantic school, he is mentioned with a kind of benevolent contempt by the opponents of that sect. The extreme which his writings are carried to is boundless: he darts from prodigy to prodigy with a coherence that cannot be followed, unless the reader allows himself to sympathise with the author. The effects of the ideal philosophy of Fichte, and the love of the Gothic, are so preternaturally combined as to be nearly discernible in Novalis's works. He had literally constructed an unreal world of his own, and seems to have breathed an atmosphere utterly unlike that of the actual world. A desire of combining religious fervency with philosophy is also apparent; and a combination of speculation and enthusiasm which is found in the writings of the Alexandrian Platonists and the Mystics was very acceptable to him. The 'Hymns to Night,' and the latter part of 'Ofterdingen,' are equally remarkable for the vast power manifested in the construction and the dress of the construction itself, while here and there the acuteness of some remarks is not to be mistaken. The 'Pupils at Sais' is another fragment of a romance, the object of which was to re-examine poetry, for which and mathematics he had a great taste. If however the works above mentioned are remarkable for singular combination, his spiritual songs ('Geistliche Lieder') are no less so for their perfect simplicity and pure spirit of devotion.

The posthumous works of Novalis contain numerous aphorisms, which show the direction of his studies, a most remarkable turn of thought, and a love of startling paradox, combined with singular acuteness. A spirit of Novalis were written by his friends Tieck and F. Schlegel, with a biography prefixed by the former. The edition has been reprinted in Paris, in two vol. 8vo.

NOVARA, the province of, in the Sardinian territory, is bounded on the north by the province of Pallanza, as the east by the river Ticino, which divides it from Austrian Lombardy, on the south by the province of Macena, and on the west by the provinces of Vercelli and Val di Susa. It is about 35 miles in length and 15 in breadth, and consists in a great measure of a plain between the rivers Sesia to the west and Ticino to the east, which is crossed in a length from north to south by the Agogna, likewise an affluent of the Po. The northern part of the province extends to Genoa, which border owes to the Maroni and Orta. The population is 134,000, distributed among 93 communes. (Serritorii, Saggio Stistico d'Italia.) The country forms part of the plain of the Po, and is very productive, especially in corn, hemp, and silk. Abundance of poultry and pigs are reared.

The chief town, Novara, a bishop's see, is situated on a hill at the foot of which flows the Agogna; it is fortified, and the circumference of its ramparts is nearly two miles. Soon from a distance, the town with its numerous towers appears more considerable than it really is. It is however a place of some importance, though old looking and irregularly built: it has many churches and convents, a gymnasium, a clerical seminary, two hospitals, and the works of the Capuchins, especially that of the noble family of Bellini, a handsome square, a theatre, and 15,500 inhabitants, including its communal territory; a considerable trade is carried on in silk and agricultural produce. The church of S. Gaudenzio contains several valuable paintings. Count Prina, minister of finance of the late kingdom of Italy under Napoleon, who was murdered by the mob at Milan in 1814, was a native of Novara. Luigi Bocci, the author of the 'General History of Italy existing, in 15 volumes 8vo., and of several other works, particularly on the bucolic and modern age of Italy. The high road from Turin to Milan passes through Novara.

The other towns of the province are: 1. Borgomanaro, on the north-western border, with 4000 inhabitants; 2. Oleggio, near the right bank of the Ticino, with 6900 inhabitants; 3. Trecate, in the south part of the province, with 4200 inhabitants; 4. Camere, with 3400 inhabitants; 5. Orta, on the eastern shore of the lake of the
same name, with a sanctuary on the hills above, dedicated to St. Francis, is much frequented by the country-people around. The pretty lake of Orta, which is partly in the province of Novara, is ten miles in length from north to south, and little more than a mile in breadth. Its southern extremity is about 20 miles north of Novara. Its outlet is at the eastern end, near the town of Varese, for which the water flows into the Lago Maggiore, which is seven miles distant to the east. The banks of the lake of Orta are hilly and pleasant, and covered with villages, hamlets, and handsome country-houses. Many of the inhabitants of this district emigrate to the large cities of the Po valley, and to the Milanese, which affords some return with the savings of their industry. In the middle of the lake is the little island of S. Giulio, with a very handsome church, a palace belonging to the bishop of Novara, and some other buildings and gardens. This island was once fortified, and is mentioned in the wars of the middle ages.

The actual province of Novara is only a part of the former territorial division, called Il Novarese, which comprised the whole country between the Sesia, the Ticino, Lago Maggiore, and the Alps, producing numerous alpine valleys. It was frequently a subject of contention in the Italian wars. It formerly belonged to the duchy of Milan; it was given up by Austria to the king of Sardinia by the peace of Vienna, and returned to Austria after the Revolution of 1848, and formed part of the kingdom of Italy; and was restored to the king of Sardinia in 1815. The upper part of this interesting region is known by the name of Valli di Novara.

VALLA, VALLI DI, or ALTO NOVARESE, a geographical denomination which designates a large tract of country consisting of numerous valleys in the Leontal Alps, which are formed by mountains extending from the sources of the Anza at the eastern foot of Mount Rosa to the coast of Savoy, on the southern shore of the Lago Maggiore, which belongs to the group of the St. Gothard. All the waters from these valleys flow into the Lago Maggiore. A considerable alpine stream, the Tocosa or Tosa, flows through a long tortuous valley from north to south, about 45 miles in length, through several picturesque, fertile, and pleasant valleys, and then turns to the west of Novara to enter the Lago Maggiore, from which it is separated by a strip of land called the Vallemaggia, which extends as far as south as the bridge of Baveno, at the opening of the Great Simplon Pass. South of Crevola the main valley assumes the name of Val d'Ossola or Oscella, which it retains as far as its opening upon the Lago Maggiore. Several lateral valleys branch off at intervals and enter the main valley of the Tosa from the west, called respectively Val di Veudo, Val Bugnanco, Val Antraona, and others from the east, such as the Val Vigezza, which extends upwards to the ridge which divides the Sardinian territory from the Swiss canton of Ticino. It is a trip of 70 miles on horseback to the upper part of Legnano by the Val Vigezza; the highest pass of it, near Centovalli, is 3000 feet above the sea.

The whole of this alpine district, including the main valley of the Tosa, and the various lateral valleys which open into it, is now constituted into one administrative province of the Sardinian states, called Ossola, from the name of the chief town, Domodossola, which is well built and cheerfully situated in a broad part of the valley: it has about 1500 inhabitants. The traveller who comes from Switzerland by the above route proceeds from Domodossola, first through an Italian country, Italian manners, and Italian sky. The province of Ossola contains 33,000 inhabitants, distributed among 64 communes. (Serristori.)

South of the province of Ossola is the province of Pavia. Novara also forms a part of the Valli di Novara, and consists of a fine strip of land along the western coast of the Lago Maggiore and of several valleys extending on both sides of the lower Tosa. The longest valley is that of the Anza, a mountain-stream which descends from the Alps, a distance of nearly 30 miles enters the Tosa near Vogogna. The upper part of this valley, which is in some parts more than 4000 feet above the sea, is called Val Magnagora; several mountain-passes, practicable only in summer, lead from it into the Valais. The inhabitants of this part use a dialect of the Swiss German, and they seem to be of a race akin to that of the Valais.

Their houses are built of wood, and their country is rugged and poor. The lower or eastern part of the valley of the Anza, down to its confluence with the Tosa, is called Val Anzasca, and has quite a different aspect, in which corn is cultivated here, and the hamlets are built after the Italian fashion. The women of the Val Anzasca are noted for their cleverness, and their refined appearance and manners, which are superior to those of their neighbours. Their dress is gay and fanciful, and Tollina, to which that part of the women of the Greek islands. The Val Stroma, south of the Val Anzasca, opens to the northern coast of the lake of Orta.

The principal towns of the province of Pallanza are—1, Pallanza, on the banks of the lake Maggiore, opposite the island of San Giulio; 2, Tri River, a town belonging to the diocese of Novara, and about 2000 inhabitants; 3, Intra, north of Pallanza, which has 3300 inhabitants, and carries on some trade by boats on the lake. 3. Arona, with 2000 inhabitants. [ARONA.] The population of this province is 64,800, distributed among 98 communes.

NOVATIANS, a Christian sect which arose in the middle of the third century. Their leader Novatianus (or as Lardner prefers to call him, following the Greek writers, Novatus), was a presbyter at Rome, who, after the death of Fabian, bishop of Rome (A.D. 251), refused to submit to the authority of Cornelius, and procured from three bishops his own ordination as bishop of Rome. Upon this Cornelius pronounced a sentence of excommunication against his adherents, who immediately formed a distinct sect, and thus became schismatics. But Novatian was also reckoned as a heretic, on account of his opinions respecting those Christians who after baptism had fallen into open sin, whom he declared that the church might not receive back to her communion, even though they should give satisfactory evidence of their repentance. In consequence of this strictness of discipline his followers obtained from the Greek writers the name of Cathari (catharos), that is, Puritans. In later times the opinions of Novatian did not differ much from those of the Catholics. Some writers charge him with unsound opinions respecting the Trinity, but there is ample evidence to disprove this accusation. His latter followers condemned second marriages. Novatian is highly spoken of in the ecclesiastical writers of the fourth and fifth centuries; yet, and exemplary conduct. It is true that Cornelius accuses him of very irreproachable conduct in the means by which he obtained ordination, and in other matters; but those are the statements of a violent opponent, contained in very unmeasured language, and some of them are highly improbable.

Novatian was assisted in his proceedings by Novatus, a presbyter of Carthage, whom Cyriac calls the author of this sect, and who was the father of several bishops and several presbyters. His sect spread widely, and embraced at various times some men of very high character and attainments. The Novatians were included in the severe edict which Constantine issued, about A.D. 311, against all Christians who held to the grace of Novatian, and other heretics; but it is thought that through the influence which some of their leaders had with the emperor, they suffered little on that occasion. Under the Arian emperors they shared in common with the ortho-

dox in the persecutions which they endured; but under the Catholic emperors they appear to have enjoyed repose on account of their orthodox opinions on the Trinity. This sect declined in importance during the fifth century. Novatian wrote several works, of which there remain a treatise, 'Of Jewish Meals;' another, 'Of the Trinity,' or 'Of the Rule of Faith;' a letter of the Roman clergy to Cyprian, written during the vacancy of the see of Rome, after the death of Fabian, in August, A.D. 250. There is another letter to Cyprian, and another written by him to certain that Novatian was its author. Jerome gives a catalogue of Novatian's works, among which are two, 'Of Easter,' and 'Of Circumcision.' The Novatians asserted that their leader suffered martyrdom, but of this we have no proof.

(Œusèbius, Hist. Ecc., vi. 43; Hieronymus, De Vir. Il-
lust., chap. 70; Epiphanius, De Hæres.; Lardner's Cre-
dibility, p. ii., chap. 47; Mosheim's Ecclesiastical History, Neander's Kirchengeschichte.)
Those who are accustomed to look upon all literary composi-
tion as depending for its changes on that prevalent tone and
aesthetic quality, which in the name of the spirit of the age, will easily allow that imagina-
tive writings are not excepted from the general rule; that
they are in fact the expression of the age in which they
appear. It remains then for us to find out, if possible, what
relation they bear to that prevalent tone of society to which
we have already alluded, as the spirit of the age.*

A comparison between the novel and other imaginative compositions, such as narrative, lyric, or dramatic poetry,
will show that while the latter depends on their intrinsic
qualities as such, the former requires us to be interested in the circumstances of the plot as well as in
the characters themselves. The interest excited by the 'Iliad,' and by 'Hamlet,' exists independently of our
knowledge of ancient or modern heroes. The spirit of Denmark
and of the old German spirit upon the nations of mode:
Europe has contributed to alter the treatment and rela-
tion of women, not only in degree but in kind. To the
eye of a Roman observer, one of the most remarkable pec-
uliarities of the English novel, is the aforementioned,
which is thus predominant in the novelistic genre.

Some have been read and will be read with delight, not only by one age
or country, but by all. They exhibit pictures of humanity;
and, as such, do not depend for their popularity on the fact
of the romance of Elizabeth's time being legitimate offspring of a
taste then very prevalent for an ideal state of pastoral
life called Arcadian. The readers in that day were the
higher ranks, the court, and the nobility, and the novel
both led and followed their taste. In another country we
find that the novel was particularly popular from the time
of chivalry was nearly passed, and when the realities of
Morish warfare had been succeeded by a fashionable
enthusiasm unaccompanied by action. Such were the novels
which Cervantes began by caricaturing and ended by sup-
porting.

Sir Walter Scott's novels are in like manner the legiti-
mate creation of their age. Percy's 'Reliques' and some other
books had given a retrospective turn to literature. Men began
to find that Pope and Dryden, or even Milton, did not contain
all that was worth known in the literature of England.
A race of antiquaries sprang up, and with them an anti-
quarian novelism. Goethe's famous saying about Shaksper,
which Carlyle so cleverly applied to Scott,—'that Shaksper formed his characters from within outward,
and Scott from without inward,'—must any one who
bears it in mind while reading Scott will not fail to see that
the attraction of the 'Waverley novels' depends more on the
dresses and decorations than on the actors.

In the 19th century, during the first half of the
last century the great object of attention was 'the town,'
by which we meant the profligate life spent by men of
fashion. A glance at the poetry of that age is enough to
show that Nature had small charms for the reading public,
and that at any time when, according to the needs of
novelists, to Richardson, Fielding, and Smollett, and then
to their descriptions, anything can be more obvious, than that

the external dress of the novel,—that by which it is dis-
guished from other narrative works of imagination, and
therefore entirely of the age in which it is written, and in
which it has not been very tolerably faithful but somewhat exaggerated reflection of
the favourite ideal objects and pursuits of the reading
classes at the time.

But there is another salient feature in the novel, which:
possesses in common with the poetical romance, and
which distinguishes it most completely from all classical
literature. We refer to the important part played in almost all novel
by that kind of love which goes by the name of romance.

A feeling of the romantic spirit of the period to
which we have belonged has been given rise, which is
peculiar to the spirit of the 18th century, and which
bears the peculiarities of the English novel, as being a picture of human
life, plays a most important part. But it is still to be remembered that
it is not the passion of love as a classical author would have
described it, but the passionate as developed in those
novels, which we cannot give to 'Philip van Artevelde' the
romantic novel, as being a picture of human
life, plays a most important part. But it is still to be remembered that
it is not the passion of love as a classical author would have
described it, but the passionate as developed in those
novels, which we cannot give to ...
nector of modern romantic literature as compared with that uniformity which distinguished the romances of the middle ages. Many of the authors, however, were not contented with adding to one bulky record of the fall of Troy, or the conquests of Alexander, the last proof which we need bring to show that romances do really depend upon and go along with the prevailing tone of the age in which they appear.

It is in some places of this work to enlarge on the probable or actual effects of any course of reading, but it may be as well to point out that the injury supposed to be done to the mind by novel reading is not peculiar to any one kind of study. A constant habit of reading what is not adapted notoriately deadens the taste; and too much cultivation of any one pursuit necessarily gives the corresponding part of the mind a growth disproportionate to that of the rest. The peculiar evil of novel-reading depends on the bad quality of the food, and is much加剧ed by the love for other griefs and joys, to the prejudice of all well-ordered efforts to grapple with the realities of life.

NOVELLE. [JUSTIANN'S LEGISLATION.]

NOVEMBER, the eleventh month of the Julian year, and the second of the Macedonian. It is named from the Roman November, which is often translated November, and which is of Italian origin.

Our Saxon ancestors called November Bloth-monath (blood-month), the month of sacrifice, because at this season the heathen Saxons made a provision for winter, and offered in sacrifice many of the animals which were then killed. This month was not the less than one containing three moons, printed in Hicke's Thesaurus (vol. i., p. 219). It was common at this month to slaughter oxen, sheep, hogs, &c., for the use of the ensuing winter. The stock of salted meat prepared at this time was to last through the winter months. In their quality, voluntary, and one prepared for the use of others. Some notion of the vast extent to which the opulent provided for themselves and their retainers at this season may be formed from the contents of the larder of the elder Spenser, in 1577, which, in the month of May, contained the carcasses of eighty salted beves, five hundred hogs, and six hundred muttons, the relics of his winter provisions.

Martelemass or Martimmas beef, cured according to the festival of St. Martin, the 11th of the month, was a provision formerly well and in some places still known. The Spanish proverb, 'His Martinmas is coming, when we shall be all hogs alike,' alludes to the slaughter of swine at this period.


NOVI, The Province of, an administrative division of the Sardinian territories, which formerly belonged to the republic of Genoa, is situated on the north side of the Ligurian Sea, and is inhabited by people of the Ligurian race. It is traversed by the torrents which flow from the northern slope of the group of La Bocchetta cross the province of Novi from east to west, and flow into the Orba, which is an affluent of the Bordea. The Scrivia, a considerable stream, rises farther to the east, crosses the province of Novi in a northern direction, and then, passing by Tortona, enters the Po. The province of Novi lies chiefly among the Apennines, and is not very productive, except the most northern part, above the town of Novi, which opens into the plain of the Po, and is well cultivated. The mountains are covered with fine chestnut-trees. The population of the province is 57,500, distributed among 36 communes.

The principal towns are the following:—Novi, a cheerful, well-kept town, situated on the banks of the River Scrivia; Suasa, in the province of Novi, on the road from Genoa to Turin and Milan: the continual transit of goods and travellers gives it an appearance of bustle. Novi has several churches, a college kept by the Father Societi, and some monasteries dedicated to the Genoese patron saints, who here come to spend part of the autumn: the population is about 10,000. The Genoese style of painting the fronts of the houses with various colours is in use at Novi. Voltaggio, at the foot of La Bocchetta, on the old road to Genoa, is a poor-looking place. It has a grammar-school and 2200 inhabitants. Serravalle, on the new and fine road by the banks of the Scrivia, had 2100 inhabitants in 1804; but the population has since increased, owing to the trade which now follows this line. Gavi is a small town with a strong castle, which commands the defile in the mountains through which the old road passed. Puzzulu has 3000 inhabitants.

Novi has 2400 inhabitants. All these towns have communal or elementary schools.

It was in the neighbourhood of Novi that the French army, 40,000 strong, under Generals Joubert, Moreau, and General of the Curt, was attacked and defeated by 30,000 Austrians under Suwarow and Melas, on the 18th August, 1799, and was defeated, after ten hours' continual fighting. It was one of the most obstinate and murderous battles of the wars of the French revolution. General Joubert was killed, and Generals Moreau, Joubert, and Pergison were wounded, in the last act.

The French lost 10,000 men, killed, wounded, and drowned. Moreau withdrew the remains of the French army across the Apennines towards Genoa.

(Cay, Sto.)

NOVICE, the appellation given to persons of either sex, who are living in a monastery in a state of probation previous to becoming professed members of a monastic order. Persons who apply to enter the noviciate state, on being admitted by the superiors of the monastery, are required to live with them during the time of their stay, and are bound to conform to the discipline of the house, but they make no permanent vows, and may leave, if they find that the monastic life does not suit them. The period of the noviciate must not exceed two years, and the period of the profession of a novice must have attained the age of puberty. Richard, in the 'Bibliothèque Sacrée,' article 'Novice,' describes the qualities required according to the canons of the council of Trent for the admission of a novice: they are health, moderation, an immediate attachment for a monastic life, an invariable character, &c. No married person can be admitted unless by the consent of both parties; no person who is embittered with debts, or whose assistance is necessary for the support of his parents, is admissible. Widowers and widows may be admitted as novices, unless their labour is required for the support of their children. After the termination of the year of probation, the novice, if (he or she) persists in his vocation, and his conduct and capacity have proved satisfactory, he is admitted to the profession of a monastic life, and completely taking the solemn vows which are binding for life. Dusange, in his 'Glossarium,' article 'Novitius,' quotes the 34th canon of the council of Aquasgrana, a.d. 817, in which superior monasteries are cautioned against admitting novices with so much facility, as they were wont to do in the olden times, and that if they are not disposed, morals, and mental and bodily qualifications. But in after-ages, as the number of monasteries was multiplied beyond measure, prudential restrictions were disregarded, and every monastery was resorted to in order to induce the young Romans to fly from the monastic life, and the young of both sexes, and sometimes forced them into it against their will. The misery and guilt which resulted from this practice are well known, but few perhaps have exhibited them in so vivid and fearful a light as a living Italian writer, Manzon, in his 'Promesse Spuri,' in the episode of 'Gertrude.' It was in order to guard against such abuses and their fatal results, that the council of Trent, session 25, can. 17, prescribed that female novices, after the expiration of their novitiate, should leave the walls of the monastery and return to their parents, or to the care of their guardian, and be cared for by the Bishop of the diocese, or by his vicar by him delegated, in order to ascertain that they were under no constraint or deception, that they were fully aware of the duties and privations of the monastic life, and that they voluntarily chose to enter it. These humane precautions have been in many instances; and it may be doubted whether a very young person should be allowed to bind himself for life by irrevocable vows.

NOVIKOY, NIKOLAI IVANOVITCH, born April 27th, 1744, at Tikhvinsk, near Moscow, was, if not particularly eminent as a writer, one to whom Russian literature is greatly indebted, on account of what he did for the book-trade, and for printing, and for diffusing a taste for reading among his countrymen. Though his productions were few, he did not receive the very best education, being brought up at home until the age of eighteen, when he entered the government service, and then first began to apply himself.

* For the distinction between a hearing and a reading age we are indebted to Dr. C. J. Vaughan's prize essay recited in Trinity College Chapel, Cambridge, December, 1877.
to study. Having thus conceived a passion for literary pursuits, he determined upon devoting himself to them exclusively, and accordingly retired from the service.

One of his first productions was his "Zhivopis'ect'" (The Painter), a work somewhat on the plan of the 'Spectator,' and displaying considerable talent and satiric power in sketches and caricatures of which, although now become somewhat obsolete, still retains its popularity, and has been frequently reprinted; yet the later editions are not very correct. He shortly afterwards published his "Opus" (Specimen or Essay of a Lexicon of Russian Authors," an enterprise of which, after the death of his patron, the publisher and character E. W. Petersberg, was permitted to be published by way of a memorial, having for its object the printing of useful books at a cheap rate, and diffusing them through the empire. He also set up the first circulating library; and did very much both to improve the character and increase the sale of journals and other periodicals. Novikov was a man of singular ability, and his attention confined to such improvements, for he helped to introduce many into the system of school-education. His activity and that of his associates was however looked upon with suspicion by many, and they were represented as endangering the prospects of the government, and being potentially in league with the philosophers and revolutionists of France. The consequence was that the society was broken up, and Novikov received a command to retire to a distant province. After the emperor had permitted him to return, but the fact was that time lived almost in retirement from the world, and devoted to mystic speculations, upon his estate at Tikhvenisk, where he died, July 31 (Aug. 11), 1818.

Novikov has been compared to Franklin, and he was certainly a very active and useful person. He is said to have possessed in a very extraordinary degree the art not only of gaining over others to his schemes, but of rendering them as eager and zealous in them as himself. Hence, notwithstanding the vast sums which his speculations required, they were frequently supplied by wealthy proprietors, for it was universally acknowledged that the great men and wealthy proprietors were always pressingly ready to advance whatever might be necessary. He himself was equally disinterested, his object being not to enrich himself, but that his schemes should succeed for the benefit of the public; at all events, it is certain that he died poor.

Among his own publications, in addition to those already mentioned, was a collection of historical documents and materials, entitled the 'Old Russian Library,' 1773-5, in ten volumes, and afterwards continued to twenty volumes.

NOVORUSSIA, or the eastern part of Great Russia, derives its name from its capital, which was formerly the residence of the most powerful of the Russian grand-dukes, whose dominions included also the present government of Novgorod, Part of the territory of this government is traversed by the Waldai hills, which run through this government and Tver, and are probably in no part more than 300 feet high. The face of the country is diversified with hills, rivers, high banks, plains, valleys, ridges, and sands. The northern part is sandy, and for the most part covered only with peat. In the southern part the soil is clayey or sandy, and in some places there is a black mould. There are fine pastures, and the agricultural produce amply repays the labour of the husbandmen.

The Waldai chain, so called from the town of Waldai, extends on the south-east part of the government to the frontier of Tver, forming a line of detached hills about 100 miles long, which are close to each other, and almost all of them bounded by narrow intervening valleys there is a pleasing mixture of wood and water scenery. The principal rivers are the Msta, which comes from Tver, and the Wolchow. The Msta has some falls at Borowitschka, but is navigable below them, and runs into Lake Ilmen. The Wolchow, which flows south, it is 1000 miles long and flows into the Lake Ladoga, canal, is from 600 to 1200 feet in width, and has sufficient depth of water for barks during the whole summer.

Those two rivers, which are connected by Lake Ilmen, complete the great water-communication between the Wolchow and Tver, and the Neva and the Schel, all of which fall into the Ilmen; the Schelkona and the Wolga, which join the Wolga; and the Msta and the Buscha, which run into Lake Ladoga. The government contains 42 rivers, and 3 large and 55 smaller lakes. The Neva is preserved by means of many weirs by which it is lengthened, and as many in breadth, and is connected by a Schekona with the Wolga. Lake Ilmen, which is 24 miles long and 16 wide, receives many large and small rivers, and is connected by the Wolchow with the Ladoga canal. Lake Wolchow is 14 miles long and 8 wide, which was completed in 1832, is a part of the great system of communication between the Neva and the Wolga.

The climate is cold, and very much like that of the government of Petersburg, though the latter seems to be rather colder and wetter than that of Novgorod, where the summer is often accompanied by violent storms. The climate is as changeable as in the northern circles; the country in the southern parts is unfavourable, and the frequent and early autumn frosts often destroy all prospect of good harvest. The habitants too are rather slowly in their operations, and have no regular system of cultivation. They however produce more than they require for their own consumption. The chief agricultural products are rye, barley, oats, corn, and potatoes, which are cultivated, not only for home consumption, but for exportation. Turnips, cabbages, potatoes, onions, radishes, and leeks are cultivated, as well as cucumbers and pumpkins; and in the southern circles, apples and cherries are grown. The country is covered with thick forest, but there are scarcely any oaks; the maple, the ash, and the willow are rare; the most common trees are pines, fir, birches, alders, elms, and much underwood. Timber is a great staple article of the government, but its quality is good; good exportable wood might be, and many of the forests are inaccessible in summer on account of the swamps. The crown forests alone cover a fifth part of the whole surface. All the forests abound in berries of various kinds; there are many database, including the rare elk, bear, wolves, lynxes, badgers, martens, hares, and squirrels. Owing to the length of the winter, the breeding of cattle is limited to what is necessary for the purposes of agriculture. The horses, oxen, and sheep are of the common Russian breeds; few swine and goats are kept.

The fisheries on the lakes and rivers are extremely productive, and furnish an abundant supply both for home consumption and for exportation to Petersburg, Moscow, Tver, Pakow, and Novgorod; several of the small rivers produce fish. The salt, clay, lime, and marl. The principal salt spurs are at Staraja-Russia, where from one to four million pounds of salt are annually made, which supply the princes of Novgorod and Tver.

There are numerous manufactories of any importance. In the towns there are some domestic manufactures, and in the country the people make corn linen, soap, tallow candles, and great quantities of produce. They have likewise small furnaces in which they smelt iron and make iron for domestic uses, and small articles of iron-ware. There are some thriving industries. The export trade of the province is confined to the own productions, corn, hemp, flax, salt, iron, copper, timber, flax, linen, and leather, and for the most of which goods,彼得sburg, after being taken from the narrow valley of the Wolchow, is Novgorod, the capital, the commerce of which however is not very great. Most of the goods are exported by the habitants themselves, who visit the commercial towns as
and fairs to the distance of 60 or 70 miles, in caravans of 50 or 100 carts, or in sledges drawn by one horse. Great numbers of these fairs are held at every kalends.

The great majority of the inhabitants are Russians, with a few families of Finns, and in the towns some Germans. The predominant religion is the Greek, under the archbishop of Novgorod, one of the highest prelates in the empire, whose diocese includes also the government of Olonez. He generally resides in Petersburg, where he is metropolitan. Among the Finns there are many Lutherans and some Lutheran churches.

The outskirts of Dongola are occupied by Nongorod Wolteke, that is, the Great New City, the capital of the above government, is situated in 38° 32' N. lat. and in 31° 20' E. long., 130 miles south-south-east of St. Petersburg, in a fine country on the banks of the Wolcho, where it flows out of Lake Ilmen, and on the Novgorod Canal. The city consists of three parts: the fortress, standing on a steep hill on the north side of the river, surrounded with thick walls and towers; and on the south of the river the commercial town and the Sophienstadt (St. Sophia's Town), which are connected with the fortress by a handsome stone bridge. This city is one of the most ancient in the Russian empire, having been founded, according to Nestor, the historian, in the fifth century, about the same time as Kiev. In the ninth century it had its own prince, and Rurik made it the capital of his great empire. When the Mongol hordes reduced it under Kiew. Jaroslaw, his successor, gave the city considerable immunities in 1036. The governors however made themselves independent of the Russian grand-dukes. The town having gradually acquired many extensive privileges, established in the nineteenth century the Hanseatic League established a factory here, which continued 200 years. Being most advantageously situated for trade, the town became extremely flourishing, and is said to have had in the fifteenth century 400,000 inhabitants. In 1723 the town was visited by Ivan Wassilievich; and in 1827, the grand-dukes of Russia became jealous of its prosperity, Ivan Wassilievich I completely reduced it under his power in 1747. It was governed with great severity, and a conspiracy against him having been formed in 1587, Ivan the Terrible by a L. went thither in person, and caused many of the richest inhabitants to be executed. The government continued to treat the city with great rigour till the final blow was given to its prosperity by the foundation of St. Petersburg, which diverted the commerce of this town almost entirely to the new capital, and reduced it to comparative insignificance. It consists principally of scattered groups of mean houses, separated by ruins or by fields formerly built upon, and its population does not exceed 10,000.

Now the population has increased to about 50,000, and the city is a place of considerable trade, being a market for the country, and a centre of all manufactures, including cotton, silk, and woollen goods, and being a centre of the gilded domes of its sixty-three churches, which remain as monuments of its ancient splendour. The principal church is the cathedral, dedicated to St. Sophia, which stands in the fortress, and contains, among many other curiosities, the coffin of St. Ivan of Novgorod, to which numerous pilgrims resort, and the celebrated bronze doors, 11½ feet high and 3 feet wide, adorned with numerous figures and inscriptions, which are said to have been brought, in the course of the Thirteenth century, from Constantinople and probably came from Germany. The other buildings are, three monasteries, of which that of St. Sergius is the principal, a fine bazaar, a new palace, a poor-house, and an orphan school.

There are several elementary schools and a Bible Society, a factory for carpet and needle-manufactory, tanneries, and soap and candle manufactories.

Other towns in the government of Novgorod are—Staraia-Russa, on the Polista, with 5,000 inhabitants, and considerable salt-works; Wladai, on the same river, with 3,000 inhabitants; Tchelnawa, with 4,000 inhabitants; Kirdow, with 2,500 inhabitants, remarkable for the new canal opened in 1827, which joins the Schekesna with the Suehona; Belosers, on the Schekesna; Somina, on the river of that name, made famous by the meeting of the two armies at Nischiné. Novgorod is a place of great animation, fifteen or twenty thousand persons being often assembled here; and Usjunsha, or Scheloneskaja, in a country abounding in iron; the inhabitants, 2,500 in number, have considerable trade in iron and timber. All the above towns are capitals of circles of the same name (Scheloneskaja, Hermitage of Cannibals; Kruzenshtern.)

NUBIA.

NUBIA, a general and rather vague denomination which is often used to designate a vast extent of country stretching along the banks of the Nile from the southern borders of Egypt to the frontiers of Abyssinia and Sennar. The natives however apply the name of Noubi, or Wady el Noubi, to a comparatively small tract lying between Derr and the city of Wady Nuger, in Egypt, just above the cataracts, the countries above the cataract of Assouan, as far as Dongola, are called by the general name of Berabera, and the name of Noubi is given to the black slaves brought from Sen- ner and the countries south of it. (Burchardt.)

The ancient general name for the regions south of Egypt was Ethiopia above Egypt, of which the kingdom of Meroe formed an important part, and among the various people therein mentioned by the ancient geographers are the Nubio, or Nubri Ethiopians, who are placed south of the island of Meroe, whilst the Blemmyes are nearer to the borders of Egypt, west of the Nile, and the Trogolydites lived to the eastward, near the shores of the Red Sea. The extent of information possessed by the ancients concerning those regions, and especially concerning the kingdom of Meroe, is very meagre, and the question as to its early connexion with Egypt, remains still in its infancy.

The Nub, or Nubate, are mentioned as a nation bordering on Egypt in the time of Dio-Cletian, who gave up to them a strip of land seven days' march in length, above the first cataract, on condition of their preventing the Ethiopian and Blemmyes from proceeding southwards. In the twelfth centuries however a kingdom of the Noubas was formed, which is mentioned by the Arabian geographers as a powerful Christian country at the time of the invasion of Egypt by the Moslems. Dongola was the residence of the king of the Noubas. The country appears to have continued to profess Christianity, and to have retained its independence till the thirteenth century of our era. Makrizi, an Arabian writer of the fourteenth century, quoting from his predecessor Ibn Selm, who had been to the mouth of the Nile, gives a good description of the kingdom of Nubia. He says that 'the Noubas and the Mokras were two different races, speaking two different languages, and both living on the Nile. The Noubas are the Merys, who border on the Sudanian country, and speaking the language of the ancestors of both the Noubas and Mokras were natives of Yemen, and that before the Christian creed, the two nations were Sabians, adoring the stars, to which they had erected idols, and that they were of the same blood, but afterwards the Merys became Christians, and the city of Dongola was the seat of their government.' (Extracts from Makrizi, in Appendix to Burchardt's Nubia.) It is remarked by Burchardt, that even now two different languages, both distinct from the Arabic, are spoken in Lower Nubia; namely, the Nouba and the Kemoua, and that the name of Mokra still remains in the appellation of Wady Mokrat, which is three days' journey below Berber.

Soon after the invasion of Egypt by the general of the caliph Omar, a Saracen army advanced to Dongola, and obliged Kolelylozo, the king of the Noubas, to agree to pay an annual bakt, or tribute, of 360 head of slaves. This agreement was maintained with little interruption for more than five centuries, when, the Noubas having attacked and destroyed Assouan, the king of Egypt, who was in Lower Nubia in person, the Noubas and the Kemoua, and that the name of Mokra still remains in the appellation of Wady Mokrat, which is three days' journey below Berber.

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large force into the Nubian country, which defeated Sam-
moun near Dongola, and overran the country beyond that
town for fifteen days' journey. The kingdom of Noubia
was then given to a cousin of Sammoun, and the army
returned to Egypt, carrying with them great numbers of
Noubia captives, men and women, whom they sold at
Cairo. Soon after the departure of the conquerors, Sammoun
recovered his kingdom, and the rival king took refuge in Egypt. The
sultan of Egypt then sent an army of 40,000 men to recover
the Noubia country, accompanied by 500 vessels of all sorts
to ascend the Nile. The soldiers plundered and destroyed
everything in their way until they found deserted by the inhabitants.
Sammoun escaped up the river, and being pursued by the Egyptians
fifteen days journey above Dongola, he fled to Aboah, in the
territory of the king of Alos, another Christian kingdom, said to
be more powerful than that of Noubia. His officers, bishops, and
priests abandoned him, and obtained a safe con-
duct from the commander of the Moslems. The army then
returned to Dongola, where a great feast was made and a
banquet spread in the church of Jesus (Jesu), the principal
church in Dongola. After this, Old King Daoud was then
crowned, and a body of troops left for his defence. The
payment of the batt, or tribute, was resumed, and after an
absence of six months the army returned to Assouan, with
great numbers of captives. No sooner had the army left Noubia
Sammoun returned in disguise to Dongola, and knocked
at the door of all his officers, who, when they came out
and saw him, kissed the ground in sign of allegiance.
On the next morning he assembled the army and pro-
ceeded to the town of Dongola, and sent the Moslems
guard back to Egypt, and seizing his pardon, promised to forward the
bail and ransom of his soldiers. The Moslems sent six vessels and
other presents, which were accepted. (Extract from Mak-
rizi's 'History of the Sultans of Egypt', in the Appendix of
Burkhardt's Nubia.)

These events happened in the early part of the fourteenth
century. At a time little is known of the history of
Nubia, but it seems that the power of the kings of Dongola
being broken, the country became divided into various petty
states, while fresh immigrations of Bedouin Arabs took place,
and Christianity became gradually extinct in the
country between Egypt and Abyssinia. The remains of
numerous Christian chapels are still seen along the banks of
the Nile. The Mamelukes, and after them the Ottomans,
retained possession of Lower Nubia as far as the second cata-
tra into the desert, or beyond the mountains of Shendy,
and the banks of the Nile. The old kingdom of Nuba ceased to exist, and instead
of it rose various petty Mohammedan states, such as Sukkot,
Mahah, Dongola, Berber, and others, each governed by a
malek, or chief. The name of Noubia however has remained to
this day, and is used by the inhabitants of the northern parts of the
Nile, from which place the remaining tract down to Assouan is
occupied by the tribe of Kenous. Both the Noubas and
Kenous derive their origin from Arabian Bedouins, who
immigrated at various times and mixed with the aboriginal
Christian inhabitants, who embraced their faith, while the
conquerors adopted the language of the country, and to this
day the Kenous and Nubian languages are spoken in all
Lower Nubia, to the exclusion of Arabic, which appears
again as the oral language in Dongola, from whence it came.
This language is still spoken up to Shendy, and is a
short vocabulary of the Noubas and Kenous or Nubian
languages, between which there appears to be some etymo-
logical affinity.

The Noubas and Kenous are black or nearly so, but have
not the negro features nor woolly hair. Many of them have
the peculiar style of countenance which is often seen in the
sculptures of the Egyptian temples.

The appearance of part of the country of Lower Nubia
is described by BATHN. N. HAZAI. The country of Suk-
koet and Dongola, which lies farther south, are
favoured by nature. The inhabitants of Mahass speak the
Nubia language, but appear to be a distinct race from the
Noubas; their countenances are much less expressive of
good nature; in colour they are quite black; their lips
are thick, and red; and their noses long and broad, but
not so much so as the Egyptian or Scotch. They
pretend to be descendants of the Kereya Arabs.

The conquests of Mehemet Ali, pasha of Egypt, have of
late years opened to the researches of travellers the coun-
tres of the Upper Nile, which had for ages been inaccessible
to Europeans. In October, 1829, a force of about 4,000
men, with ten field-pieces, assembled at Wady Halfa on the
second cataract, under the command of Ismael Pasha,
son of Mehmet Ali. They were accompanied by boats
of various sizes for the purpose of ascending the river. They
landed near the town of Dongola; the remnants of the
Mamelukes, who had retired some years before, fled to Shendy. But the country lying
next above Dongola, along the great bend of the Nile, was
occupied by the Shyegya, a dwelling independent tribe of Arabs,
and they were accompanied by numerous vessels of boats, and who lived
a predatory life, and had become the terror of all the coun-
tries between the second cataract and Sennara. They
always fought on horseback, with lance, broad-ax, and
swords; and being accustomed to live by robbery, they strictly respect the duties of hospitality.

These were the first enemies whom Ismael Pasha was to encounter as
his march. They had already fought against the Mame-
lukes of Dongola with success. Hearing of Ismael's advance, they sent him a
challenge, to which he replied: 'You cannot rob us, for
we live by disturbing and pillaging all the countries
around your own;' to which they retorted, 'that they had no other
means of living.' 'Why don't you cultivate your land,'
said Ismael, 'and live a peaceful life,' to which they
replied: 'We have been bred up to live and prosper
by what you call robbery; we will not work, nor
change our manner of living.' 'I will make you change it,'
replied Ismael, and the pasha. (Narratives of an Expedition to Dongola and
Shendi, by an American.)

In the first encounter the Shyegya charged the advanced

guard of the pasha with great force, but they could not
withstand the regular fire of the carabines of the
Ottomans and they dispersed themselves. They soon however
made another stand in great numbers, but the pasha having
ordered up his guns, they were again defeated with
great slaughter, and most of them fled across the desert to
Shendi, leaving the country formerly subject to them to
the Mahams and the other tribes. Ismael of course
habitually, and he with others. Because the
strangers the temples and pyramids of Mount Barkal and
Napata, the finest monuments of Upper Nubia. (BAER.)

From thence Ismael proceeded to Berber, which country
made its submission, and there the army rested for two
months. A description of the country of Berber, one of the
finest on the Upper Nile, is given under BARKAL.

At Berber the pasha received the submission of some of
the Mameluke boys, who had fled to Shendi, and he gave them
assurance of living in peace in Egypt for the rest of their
lives. It is situated near a rock, known as Bureyku, and is
the birthplace of Shendi, who came in person to kiss the hand of
the conqueror. The army continued its march southwards
and after eight days' march from Berber, following the west
bank of the Nile, arrived at Shendi on the 9th of
May, 1830. Shendi was the principal place in the country of Atban,
the antient island of Meroe, so called because it lay
nearly enclosed between the Nile on the west, the
Atban or Tocaze on the north and east, and the Dender, Rahs, and
other islands on the south, coming as it is at the
mouth of the White Nile. The interior of this vast country is little known,
it is nominally divided between the states of Shendi and
Halfay, which is to the south of the former, the two
malekhs or chiefs of which are said to be able to bring into the
field thirty thousand and well mounted horses, but
Ismael Pasha,' says the American writer already quoted, who
accompanied Ismael, 'led through a country consisting of
arid
plains of fertile soil, extending many miles from the
rivers, and mostly covered with herbage; few mountains or hills were visible. We passed many large villages built at a distance from the river to be out of the reach of the inundation. The houses were generally built with sloping roofs of thatched straw, as the country is here subject to periodical rainstorms. Caillaud, who accompanied the same expedition, observes that the periphery of these extend to the northward to between 17° and 17° 30' N. lat.; and it is remarkable that Strabo says that Meroe, the present Shendi, which is about 17° N. lat., was the limits of the rains. The rains extend to Berlin and they last three or four months, and the rainy season extends from July to September. North of that, between Berber and Assouar, there is no fixed rainy season, but heavy showers fall now and then in all seasons. The bed of the Nile in Shendi is frequently about a mile and a half broad, though the actual stream is much narrower, and shallower. The Nil漲 produces dourra, some wheat, vegetables, chick peas, and other pulse. The cattle are remarkably fine. The strip of cultivable soil near Shendi is very narrow, but to the north and south of the town there are some fine arable plains. Water is scarce and on those high banks which the inundations do not attain, but the Arab peasantry are too lazy to bestow the labour necessary to water the soil a second and third time, as is done in the elevated parts of Upper Egypt. Elephants are first seen at Abou Heraza, in the southern part of the whole country to which they have never been known to pass to the north of that district, which is bounded by a mountain-range six or eight hours in breadth, reaching close to the Nile. Burchardt says the Caissaurs were frequently seen in the wadys east of Shendi, towards the breadth of it. In the mountains of Dender, a district towards the Atbara, six or eight days' journey south-east of the Shendi, the giraffe (zerafa, i.e. 'the elegant,' in Arabic) is found. Crocodiles are very numerous in the Nile about Shendi, and much dreaded; but the hippopotamus is rarely seen. (Burchardt.)

The town of Shendi, the capital of the country, about half a mile from the east bank of the river, is large, and perhaps contains the pre or six thousand inhabitants; the streets are wide and airy; the houses are low, but well built of clay; there are regular market-places, where, besides meat, fowls, liquid butter, grain, and vegetables, spices from Jidda, gum Arabic, beads and other ornaments for the women are sold. Great numbers of hogs slaves from Abyssinia, Sennaar, and Darfur are purchased at a moderate price; a handsome Abyssinian girl sells for 40 or 50 dollars.

There is another town on the opposite or western bank of the Nile, called Shendi el Gharb (Shendi on the west), which contains the pre or six thousand inhabitants. It has three market-places, where the people of the country exchange dourra and dourra for other provisions and goods. The people of Shendi have a bad character; they are said to be fraudulent, debauched, and drunken.

Many Arab tribes inhabit the territory of Shendi, the great part of whom still lead the Bedouin life. The merchants of the town, and especially the brokers, are mostly foreign settlers from Dongola, Sennaar, Darfur, and Kordofan. A succession of Arab meleks, or kings, of whom Caillaud gives the series, had ruled Shendi for nearly two centuries and a half. The habits of the people are nearly the same as at Berber, but there is more wealth, in consequence the pre or six thousand well-dressed persons can be seen than in the latter country.

Not far from eastern Shendi, to the northwards near a village called Assour, or Hatchour, are a number of tara-byls, or pyramids, the largest of which is about sixty feet high. Small sanctuaries are also attached to them, as to those near Mount Barkal. There are also extensive fragments of walls, columns, square pillars, and the remains of a small temple sixty feet in length, near the borders of the desert, and those of a larger one, with its causeway of bricks. About twenty miles from eastern Shendi, on the river side, are the remains of a Typhonium and other ruins; and farther south, at some distance from the Nile, are the remains of other temples, and of an avenue of sphinxes, and several sculptures executed in a rude and barbarous style.

About twelve miles nearly due north of Naga, in a valley bordering on the desert, are the ruins of El Meqourat, which consist of several temples of small dimensions, connected by galleries and terraces, with a number of small chambers, the whole surrounded by a double enclosure. It has been supposed that this retired spot may have been the Hieropolis, or sacred college, of the priests of Meroe, and that the city itself was near Assour. (Caillaud, Voyage à Meroe.)

Halfa, which lies south of Shendi, and between it and Sennaar, is a less important state. Its melek submitted to Ismail Pasha like the others. The head town, of the same name, lies above the confluence of the White and Blue rivers, and on the east bank of the latter, in about 15° 40' N. lat. It was formerly the capital of the Kingdom of Shendi, from which it is separated by the Blue River, which is the greatest limit that can be assigned to the geographical denomination of 'Nubia.' The country beyond it is described under Sennaar.

The monuments of Lower Nubia have been described by Gau, Burchardt, Belzoni, and others. The most remarkable are the temples of Abousambul [Abousambulu], Dongour, and Soleb; though the last, lying above the second cataract, is considered by some writers as in Upper Nubia. A short account of these temples, as given in the British Museum, 'Egyptian Antiquities,' published by the Society for the Diffusion of Useful Knowledge, vol. i., chap. 7 and 8. The monuments of Upper Nubia and of Meroe have been described by Waddington, Caillaud, and Kippel. Since the publication of Belzoni, is now open to the investigation of European travellers, being under obedience to the Pasha of Egypt. It may be not amiss to state that the young and enterprising Ismail, who achieved the subjugation of these vast and almost unknown countries, and who can highly be trusted, possesses a large harem, and is said, by a French envoy, 'to have a set of young women which is as great as that which he had before his departure from Shendi, and of whom he was greatly fond.' It was hardly four-and-twenty years old at the time of his death.

Melek Nimir, with his accomplices, fled into Darfur.

Nucipraga. [Nutcracker.]

Nucleobranchiata. M. de Blainville's name for his fifth order of his classification of the second subclass (Paraceroephala Monocora). M. Rang, who has illustrated the anatomy of some of the families, makes the Nucleobranchiata, in his arrangement, the first order of Cuvier's class Gasteropoda, and comprises under it some of the most interesting of Lamarck and the family Pierotrachetes of De Férussac.

The following character of the order is given by M. Rang:

Insect furnished with a foot compressed into the form of a fin, with an acetabulum or sucker (ventouse) on its superior border. Branchiopitum pectinated. Both sexes comprised in the same individual.*

Often a shell, which is spiral, has a very large aperture, and is vitreous and thin. międzale.

An operculum sometimes.

M. Rang observes that the Mollusks which he had already, in an anatomical memoir on the genus Atlantic, proposed to assemble under the name of Nucleobranchiata, borrowed from M. de Blainville, are all pelagic animals which are often met with on the surface of the sea in calm weather, swimming in an inverted position by the aid of their foot, which is compressed into a fin. They never creep, but they have the power of fixing themselves (loose by means of their tentacles on the surface of the sea, and by the aid of the lateral branch of the foot, which is united with the ventral fin, and at the same moment making a vacuum. The shells are very much sought after in collections on account of their extreme rarity.

Two families, according to M. Rang's arrangement, constitute the order Nucleobranchiata.

* N.B. M. Verrey, in his description de Concanus, says 'Sesare saperie comme dans les Finsies; les maîtres ou leur organes se placent antérieurement dans le côté gauche sous la nageoire dorsale, les tentacules l'ont près de l'anus.'
Fiorole (Pterodrachae, Forsk.; Fioroloides, Blainv.; Urobranchiata, L.).

Animal elongated, straight, and horizontal; or one or more fins; branchiae forming, with the other viscera, a nucleus on the dorsal part.

Shell sometimes present, and, when it is, incapable of containing more than a very small part of the animal.

Genera. Firola (Pterodrachae, Forsk.; Fioroloides and Sagittella, Les.).

Generic Character.—Animal very much elongated, gelatinous and transparent, terminated behind by a tail more or less long and pointed; mouth situated at the extremity of a proboscis, which is usually incurved and adapted for aspiration. No tentacles, or only two tentacular rudiments carrying the eyes at their external base; one or more fins; nucleus exposed, protected only by a membrane, and always situated below and behind the ventral fin; termination of the intestinal canal and of the organs of generation in a tube near the right side.

No shell. (Rang.)

The author whose characters we have above given remarks that the Fiorole are very common animals in the seas of the warm and temperate zones, where they are remarkable for their extreme transparency, which is often interrupted by golden spots. Lesueur, to whom we owe information regarding their anatomy, mentions several species, perhaps too indistinctly defined. He also divided the Fiorole into three genera, the Fiorole, the Fioroloides, and the Sagittella; but the generic distinctions upon which they rest appearing to M. Rang to be insufficient even for the establishment of subgenera, the last-named zoologist does not adopt them, and he thinks that perhaps the genus Hystrix of M. Rafinesque ought to be included in the genus comprising the Fiorole, observing however, at the same time, that details on this subject are wanting. The species indeed, he adds, are sometimes very difficult to be determined, in consequence of the mutilations to which they are subject; and it is for this reason that great circumspection should be employed in establishing new species.

Carinaria. (See the article.)

M. Rang remarks that the mollusks which form this genus are beautiful animals, transparent as crystal, and adorned with vivid colours. They are only found on the surface of the sea in calm weather, and are most frequently mutilated in some part or other, especially in the nucleus, which makes their shells comparatively rare in collections. M. Rang states that there are four well-characterized species, Carinaria vitrea (the most rare, and the animal belonging to which has not yet been made known), C. fragilis, C. medierrana, and C. depressa; this last, which is comparatively new, was discovered by M. Rang in the seas of Madagascar.

M. Rang's experience is, that he can offer as a constant character the presence of aspcrities on the mantle of these mollusks, because he has observed them upon four very distinct species (Carinaria medierrana and depressa, and two other species which he has not been able to make known on account of their mutilation), whilst he never met with such aspcrities in the Fiorole, in which, instead of aspcrities, there are numerous spots. The difficulty, he remarks, of distinguishing mutilated Fiorole and Carinaria at sea, obliges the observer to neglect no character which may lead to a more easy determination, and that is the reason why he calls attention to the position of the branchial comb as a probable character, which has always appeared to him to be placed before the nucleus in the Carinaria, and behind it in the Fiorole. The position of the nucleus with reference to the ventral fin may also, in his opinion, afford a good generic character.

In the cut taken from M. Verany's figure of Carinaria, vol. vi., p. 294, the letter e, indicating the line which points out the tentacleum, has dropped out.
Eolidia. (Cuv.) (See the article.)

Tergipes. (Cuv., Blainv. *Eolidia*, Ok.)

**Generic Character.**—Animal limaciform, gelatinous; head tolerably distinct and furnished with two pair of tentacula; foot entire, and occupying nearly its whole length; branchiae in form of small clubs (massues), not numerous, disposed in two rows, one on each side of the back; termination of the intestinal canal and of the organs of generation as in the *Eolidia*.

**Tergipes lacunatus.**

M. Rang is of opinion that this genus is closely approximated to the *Eolidia*, with which, perhaps, it would be united if it was better known. Cuvier, indeed, observes M. Rang, states that each branchial organ of *Tergipes* is terminated by a small sucker, so as to serve them for a foot to creep on the back; but M. Rang thinks that this singular organization requires to be confirmed by observation on the living animal.

**Tritonidae.** (Tritonids, Lam.; *Dioeces*, Blainv.; *Seriobranches*, Lat.)

Animal with two superior tentacles, which are capable of being retracted into a kind of sheath at their base; a membranous veil more or less extended above the mouth; organs of generation and anus distant, on the right side; organs of respiration of various forms, but disposed on two longitudinal rows.

**Tethys.**

**Generic Character.**—Animal pelagic, gelatinous, and transparent; head distinct, and comprising a large membranous fringed veil, forming the funnel, shortened below, and from whose middle a small proboscis, terminated by the mouth, elevates itself: the tentacles, two in number, situated at the base of the veil, compressed, open at their summit to give passage to a small conical and retractile tube; foot very large; branchiae formed by two longitudinal series of branched tufts, unequal alternately from right to left, and from front to rear; organs of generation united on the anterior portion of the right side; orifice of the anus placed more backward.

Cuvier has thrown great light on this remarkable genus. The principal, and indeed, if we mistake not, the only recorded species, is a native of the Mediterranean, and lives far from the shore on banks of madrepore or on floating fuel, using its veil as a natatory organ.

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**Tethys isopora.**

*as seen from above; b, seen from below.*

**Molibe.** (Rang.)

Animal pelagic, gelatinous, transparent, and limaciform; head distinct, and comprising a membranous veil rolled into the form of a funnel, furnished internally with cirri, directed to the exterior, and from the middle of which a small
proboscis, terminated by the mouth, elevates itself; tentacles, to the number of two, situated at the base of the veil, very elongated, conical, and terminated by a small capsule, from which a conical and retractile organ has egress; foot as long as the animal, but very narrow, in form of a furrow; branchiae not numerous, formed of two series of oblong club-shaped processes (massaeae), which are rounded at their summit, pediculated at their base, and covered with small tubercles; organs of generation united on the anterior portion of the right side; anus more backward. (Rang.)

M. Rang is of opinion that Melibe is doubtless very closely approximated to Tethys, with which he had confounded it; but subsequent observation made on the living animal has led him to the conclusion that there is a generic difference, founded on the entirely different organization of the branchiae.

The animal, which swims very well by agitating the posterior parts of its body from side to side, lives upon the floating plants of the seas near the Cape of Good Hope, where M. Rang observed it alive for some time. The branchial fell on a slight touch. The species which serves for the type of the genus is Melibe ruza.

Melibe ruza.

b., veil which surrounds the mouth; c., tentacles; g., branchial club-like processes; h., orifice of the organs of generation; i., orifice of the anus; j., foot; k., dorsal exterior.

M. Rang remarks that certain little animals found by M. Dorigny on the coast of Rochelle, and which present as respiratory organs small club-like processes, disposed in two longitudinal and dorsal rows, may, perhaps, be added to this genus.

Scyllaea. (Lin.)

Generic Character.—Animal pelagic, gelatinous, very much compressed laterally; the head not very distinct, and of a horseshoe shape; two great tentacles in form of reversed horns (cornets), flattened, slit anteriorly, and open at the summit for giving passage to a small-pointed and retractile body; mouth at the extremity of a very small proboscis, armed with an apparatus proper for mastication; foot long and very narrow, in form of a furrow; branchiae in form of small tufted pencils, scattered over the internal surfaces of many equal appendages (appendices pairs) of the skin, and on a caudal and median crest; orifice of the anus and of the organs of generation on the right side.

This genus is spread through all the warm seas, and is especially to be found on the P Bass. Its foot, like that of nearly all the animals of this family, is admirably contrived for enbracing the leaves of these plants. Only two species appear to be recorded.

Scyllaea peligroa.

Tritonia. (Cuv.)

Generic Character.—Animal limaciform, with the head not very distinct, surmounted by two retractile tentacles, in a sort of case, carrying an arched frontal veil but little extended; the mouth armed with two lateral horns, which are trenchant and denticulated on the edges, long and channelled; branchiae in form of branchial tufts, ranged in a longitudinal series on each side of the bars, organs of generation united on the anterior portion of the right side; anus situated more backward.

These animals also attach themselves to marine plants. They are closely approximated to the Scyllaea, of whose habits they entirely partake, and also, in great part, of their organization. M. Rang observes that the species are not as yet well determined, though many exist upon the coast of France. Among these Cuvier has anatomically examined Tritonia Homohergi.
Nulia also divided among his subjects the lands which Romulus had conquered in war, and secured their inviolability by ordering land marks to be set up on every portion which were consecrated to Terminus, the god of boundaries. He divided the artisans, according to their trades, into nine companies, or corporations. During his reign, which lasted forty-three years, no war was carried on; the gates of Janus were shut, and a temple was built to Janus, which was gradually decay, in a good old age, and was buried under the hill Janiculum; and near him, in a separate tomb, were buried the books of his laws and ordinances.

The successor of the reign of Numia Pompius, who belongs to a period in which it is impossible to separate truth from fiction. According to Niebuhr and the writers who adopt his views of Roman history, the reign of Numia is considered in its political aspect only as a representation of the union between the Sabines and the original inhabitants of Rome, or, in other words, between the tribes of the Titiennes and the Ramnes.

(Livy, i. 18-21; Dionyusius of Halicarnassus, ii. 58-76; Cicero, De Republica, i. 12-16; Plutarch's Life of Numia; the Histories of Rome, by Niebuhr, Arnold, and Malden.)

NUMANTIA, a celebrated town of the Celtiberi in Spain, was situated on the river Durius (Douro), at no great distance from its mouth; it was founded in the time of Numantia Pompius, and enlarged by his successor, as also by a Roman general, named Scipio the Younger. It was surrounded on three sides by very thick woods, and could only be approached on one side, which was defended by ditches and palisades. (Appian, vi. 76, 91.) It was twenty-four miles distant from Rome, and the Roman army had to march fifteen miles to supply themselves with victuals. Its position has been a subject of considerable dispute; but it appears most probable that it was situated near the modern town of Soria.

Numantia is memorable in history for the war which it carried on against the Romans for the space of fourteen years. (Flor. ii. 18.) Strabo states that the war lasted twenty years; but he appears, as Cassaubon has remarked, to include in this period the war which was carried on by Viriathus. (Strabo, iii. 162.) Cassaubon's date. The Numantines were originally induced to engage in this war through the influence of Viriathus. They were first opposed by Quintus Pompeius, the consul, B.C. 141, who was defeated with great slaughter (Oros., vi. 4), and afterwards repaired to make terms with the Numantines, who by paying thirty talents of silver. This negotiation was broken off by M. Popilius, who succeeded Pompeius, B.C. 139. Popilius however did not meet with any better success than his predecessor; he was ignominiously defeated, and obliged to retreat with the greatest part of his army, the leaders being Pelendones, Maneinus, Aximus, Lepidus, and Piso, met with similar disasters; till at length the Roman people, alarmed at the long continuance of the war, appointed Scipio Afri camanus consul, B.C. 134, for the express purpose of the conquest of Numantia. After levying a large army, he invested the town; and having in vain endeavoured to take it by storm, he turned the siege into a blockade, and obtained possession of the place (B.C. 133), at the end of a year and three months from the time of his first attack. The Numantines displayed the greatest courage and heroism during the whole of the siege; and when their provisions entirely failed, they set fire to the city, and perished amidst the flames.

(Livy, i. 18-21; Dionyusius of Halicarnassus, ii. 58-76; Cicero, De Republica, i. 12-16; Plutarch's Life of Numia; the Histories of Rome, by Niebuhr, Arnold, and Malden.)

NUMA POMPILIO, the second king of Rome, was, according to tradition, a native of the Sabine town of Cures. On the death of Romulus the senate at first chose no king, and took upon itself the government of the state; but as the people were more oppressively treated than before, they insisted that a king should be appointed. A contest however arose respecting the choice of the king between the Romans and Sabines, and it was at length agreed that the former should choose a king out of the latter. Their choice fell upon Numa Pompius, who was revered by all for his wisdom and knowledge, which, according to a popular tradition, he derived from Pythagoras.

Numa not however assume the sovereignty till he was assured by the auspices that the gods approved of his election. Instructed by the camara, or nymph, Eggrisia, he founded the whole system of the Roman religion; he increased the number of augurs, regulated the duties of the pontifices, and augmented the flames of the vestal virgins, and the Sallus. He forbade all costly sacrifices, and allowed no blood to be shed upon the altars or any images of the gods to be made. To give a proof that all his institutions were established by divine authority, he is said to have given a part of the kingdom to the Sabines, that they might be the noblest among his subjects, during which, upon the appearance of Eggrisia, all the dishes were changed into golden vessels and the food into viands fit for the gods.

(Livy, i. 18-21; Dionyusius of Halicarnassus, ii. 58-76; Cicero, De Republica, i. 12-16; Plutarch's Life of Numia; the Histories of Rome, by Niebuhr, Arnold, and Malden.)

NUMER. The general considerations which this word would suggest cannot be treated independently of those which have been stated in treating of the nature of ratio in music. We will form a part of the subject of Proportion, we refer to that article as the continuation of the present one.

The notion of number is suggested by repetition or succession; and it is customary to call the actual things represented in this notion of a number, the objects of the collection, while the notion formed from comparing the collection with one of the things collected is called an abstract number. This abstract number arises from repetition of objects, in
which the attention is directed to the repetitions as repetitions, and not to the objects as distinguished from any other objects. It is therefore a number of times, not a number of things. [MULTIPLICATION.]

If we never numbered any things capable of division into parts like themselves, our notion of number would rest in what we now called whole number. If the intellect were taught to count by the beating of a clock, and never came in contact with any other magnitude except that of the intervals between the beats, it is difficult to see how the idea of fractions would be obtained. But when we come to put together continuous magnitudes, which might increase or decrease without any alteration except that of magnitude, such as lines, surfaces, &c., we then begin to see that the unit is purely arbitrary, considered as a magnitude, so that the consideration of smaller or larger units, and the reduction of processes from one unit to another, become necessary. Hence the doctrine of fractions, and finally that of INCOMMENSURABLES.

The unit of magnitude and the unit of repetition are as distinct as concrete and abstract number. A given magnitude being chosen, we may fix our own ideas of other magnitudes and convey them to other persons by describing the repetitions of the given unit which will severally give the other magnitudes: but it is incorrect to say that in any operation we operate upon magnitudes represented by numbers; the operations are performed by our minds upon notions of repetition, not of magnitude. Any question of numbers arising out of geometry might, so far as the pure arithmetical processes are concerned, as well have the properties of these operations in common. If beats of a clock or motions of the arm, as in repetitions of lengths or areas, it is not true that such simple successions would suggest as many problems as geometry or commercial business; but that is a distinct consideration.

Decimal forms formerly took place upon the question whether 1 represents a number; it being asserted that number must be more than one. The settlement of such a question depended upon convention entirely, and is very easy. In the common word neither of the two are numbers, the number of men, or of pebbles, would suggest the idea of more than two: in fact, number means indefinitely many; more than the eye can decide on without counting; several, that is to say, as many as require the serverting which takes place in counting. With different persons this commencement of number, vulgarly speaking, may be different; all persons discern three without counting, and probably four; but it is certain that five must be severed by most persons, and six probably by all. Those who watch the progress of children can easily see that their scales of reckoning are successively one and more; one, two, and more; one, two, two, three, and more.

In the common playing-cards we decide by forms, not by numbers; neither of the nine is distinguished from the seven by the different positions of the odd spot, there would be continual mistakes.

In mathematical language, every numerical symbol is called number, including 0, 1, fractions, whole numbers, and even infinity. The talent of easily combining and remembering numbers, or of calculation, is a perfectly distinct thing from that of mathematical invention, reasoning, or application; though the two are frequently confounded. Taking mathematicians of the highest order, some have been singularly gifted in this respect, some distinguished in neither way, and some more than commonly deficient. A very deceptive mode of speaking is common with regard to numbers, which divides them into cardinal and ordinal. The first, second, third, &c. are cardinal. The real distinction is that of numeral nouns and numeral pronouns, to the latter of which the term ordinal might properly be applied. That first, second, third, &c. are really pronouns is obvious if we consider that, and that, and the other would supply their places. The so-called cardinal numbers denote collections; the ordinal numbers point out only the places of the several units of which a collection is composed. Even one, when its force is simply selective or distinctive, is a pronoun, as in 'one or another.' [Arithmetical; Magnitude; Proportion; Quantity; Unit.]

NUMBERS, APPELLATIONS OF. Various names have been given to classes of numbers, each expressive of properties common to all in its class: they are pointed out in the following list:

The whole scale, 1, 2, 3, &c., is called that of numbered numbers; it is subdivided into the scale of odd numbers, 1, 3, 5, &c., and even numbers, 2, 4, 6, &c. These are subdivided into oddly odd numbers, 1, 3, 5, 7, 11, &c.; evenly even numbers, 2, 4, 6, &c.; and evenly odd numbers, 2, 6, 10, &c. These latter stipulations are not in universal use, though they are very convenient. Thus with reference to division by two and by four, all numbers have names; but not with reference to any higher numbers. The expression of a number divided by m leaves a remainder n (namely, x/r, where x is a whole number) is so simple, that it is more eaid-written than described. When 0 is included in the list, it is considered as divisible without remainder by every number.

The division of numbers into square numbers, 1, 4, 9, 16, &c.; cube numbers, 1, 8, 27, 64, &c.; fourth powers, 1, 16, 81, 256, &c., and so on, may be carried to any extent.

A prime number is any one of the list, 2, 3, 5, 7, 11, &c., no one of which is divisible by any number except unity and itself. A composite number is any one which is not prime.

A figure number is any one out of any of the following series, the first excepted, which is only introduced as a base:

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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1 &amp;c.</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1 &amp;c.</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1 &amp;c.</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1 &amp;c.</td>
</tr>
</tbody>
</table>

Each number is the sum of the numbers in the proceeding row: thus 84 is the sum of 1, 6, 21, and 56, and 84 is the fourth number of the fifth order of figure numbers. The n th number in the first order is \( n + 1 \), in the second order \( n + 1 + n + 2 \), in the third order \( n + 1 + n + 2 + n + 3 \), and so on.

Polygonal numbers, as their name imports (Polygonov), may be subdivided into triangular, quadrangular, pentagonal, hexagonal, &c. To find the numbers which bear the name of an n-sided figure, form a series beginning with 1 and consisting of terms increasing in arithmetical progression, with a common difference \( n - 2 \); and form the sum of terms in the series in the manner described. Thus for decagonal numbers, we have—

<table>
<thead>
<tr>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1 &amp;c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
<td>17</td>
<td>25</td>
<td>33</td>
<td>41 &amp;c.</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>27</td>
<td>52</td>
<td>85</td>
<td>126 &amp;c.</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>27</td>
<td>52</td>
<td>85</td>
<td>126 &amp;c.</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>27</td>
<td>52</td>
<td>85</td>
<td>126 &amp;c.</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>27</td>
<td>52</td>
<td>85</td>
<td>126 &amp;c.</td>
</tr>
</tbody>
</table>

and the decagonal numbers are 1, 10, 27, &c. The n th number of the n-sided order of figures is

\[ 1 + n + \frac{m - 1}{2} \]

The following are some of the polygonal numbers:—

<table>
<thead>
<tr>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1 &amp;c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>6</td>
<td>10</td>
<td>15</td>
<td>21 &amp;c.</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>9</td>
<td>16</td>
<td>25</td>
<td>36 &amp;c.</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>12</td>
<td>22</td>
<td>35</td>
<td>51 &amp;c.</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>15</td>
<td>28</td>
<td>43</td>
<td>66 &amp;c.</td>
</tr>
</tbody>
</table>

Pyramidal numbers are formed by summing the pgonal numbers; thus to find pentagonally pyramidal numbers, take the pgonal numbers 3, 12, 35, 78, &c. and multiply each by the next higher number.

Numbers were once considered as abundant, perfect, and defective. An abundant number was one in which the sum of all its divisors (unity included, but not itself) exceeded the number: thus 12 is an abundant number, because \( 1 + 2 + 3 + 4 + 5 + 6 \) is greater than 12. A perfect number was one in which the sum of all the divisors was equal to
the number: thus 6 is 1 + 2 + 3, and is a perfect number, as is 28, or 1 + 2 + 4 + 7 + 14. A defective number will be one in which the sum of the divisors is less than the number, as 10, in which 1 + 2 + 5 is less than 10. Whenever 2\(n\) - 1 is a prime number, then \(2^n - \text{(2\(-1\))\-1}\) is a perfect number, whereas 2\(2\)\(-1\) or 31, is a perfect number, whence 2\(6\)\(-1\) or 64 \times 127, or 8126, is a perfect number.

Amicable numbers are those each of which is equal to the sum of all the divisors of the other. Such are 264 and 220

9363583 and 9437056.

Other names have been invented descriptive of classes of numbers; but the preceding are those which most often occur in the past history of mathematics. With the exception of SQUARES, CUBES, PYRAMIDS, and odd, the preceding appellatives rarely appear in modern works.

NUMBERS, FIGURATE AND POLYNOMIAL.

[Numbers, Appellations OR.

NUMBERS, THEORY OF. The theory of numbers is in fact the science of whole or integer numbers, and its most general problem is: 'Given any equation whatsoever involving two or more unknown quantities, or any number of equations between a greater number of unknown quantities, to find the possible solution in whole numbers of the values of the unknown letters are whole numbers.' It may also be considered that the science extends to the determination of all solutions which contain nothing but rational or commensurable fractions, all such quantities or incom- mensurable whole numbers. If, for example, \(x^2 + y^2 = 1000\) were to be solved, \(x\) and \(y\) being whole numbers or rational fractions, let the rational fractions reduced to a common denominator be \(p: q\); then the equation becomes \(p^2 + q^2 = 1000\), and if all possible whole values of \(p, q\), and \(x\) be found, all the fractional solutions of the former equation can be exhibited.

Connected with the science before us is a very large quantity of properties of numbers, of which it must be said that they can be proved enough, but cannot be explained. Usually, in retracing the steps of an algebraical demonstration, we can easily connect the result with common and self-evident notions, which seem both to justify the conclusion, to render it natural, and destroy much of the curiosity, and all interest, with which it is looked at by a person used to algebra, who bears the conclusion for the first time. In the theory of numbers it seems to us that the curious character of the conclusions is not so much lessened by the demonstrations, and perhaps this may be the reason why the science becomes a sort of passion, as Legendre remarks, with most of those who take it up. The instances given by the writer just cited, in his preface, will show the sort of properties which we speak of. If \(x\) can be any rational number, and \(y\) any number not directly divisible by it, then \(x^2 - y^2\) is always divisible by \(c\). Then \(2^2 - 1\), or 6, is divisible by 7. Again, if any prime number divided by 4 leave a remainder 1, it is the sum of two square numbers: thus 13 is the sum of 9 and 4, 17 of 16 and 1, 29 of 25 and 4, and 41.

The theory of numbers is not of much immediate practical utility in the applications of mathematics, which generally involve continuously increasing magnitude, and in which therefore the introduction of whole numbers is matter of convenience, and not of necessity. Again, the data of such applications are usually only approximate, so that an answer in whole numbers, should such a thing occur, is not exact, and possesses no particular interest. Hence this theory is little studied by a very large class of mathematicians, who do not pretend to know it. It is a subject, however, of great utility in the higher analysis, who does not even know the principal results obtained by Gauss or Legendre.

The subject is, in fact, an isolated part of mathematics, which may be at the choice of the student. It may possibly at some future time be connected with ordinary analysis, that is to say, the determination of the integral solutions of a set of equations may not be so distinct a thing from that of a mere solution, integer or not, as it is presented. Indeed, a hint given by M. Lag, in a tract recently to be cited, does give completely the means of assimilating the expression of a problem in this theory to that of one in ordinary analysis. Suppose, for example, it is required to solve in whole numbers the equation \(x^2 + 4 = z^2\). Let \(x\) represent two right angles; then it is well known that \(\sin x = 0\) when \(x\) is a whole number, and never else; so that 'required a solution of \(x^2 + y^2 = z^2\) in whole numbers' is precisely the same problem as 'required a solution of the three equations \(x^2 + y^2 = z^2, \sin x = 0, \sin y = 0\'.

The earliest consideration of the theory of numbers may have been made in India [Viga Ganita]; but the earliest Greek is probably that of Diophantus, which consists of nothing else but problems of this science, insomuch that the theory itself has been sometimes called the Diophantine analysis. The subject then rested, without making any progress, until the time of Bachet de Meziére and Fermat, the editor and commentator of Diophantus. The subject rested again until the time of the mathematician Lagrange, after whom Lagrange, Legendre, and Gauss applied themselves contemporaneously to this theory. The works of the two latter are the separate treatises on this particular science, in which the advanced mathematical student must look to know its present state. Various Memoirs of MM. Cauchy and Libri may also be mentioned; one in particular by the latter (in the 'Memoires de Mathematique et de Physique,' vol. 1, Florence, 1829), in which the subject is made to have more resemblance than usual to ordinary analysis.

The 'Disquisitiones Arithmeticæ' of Gauss (Brunswick, 1801) was translated into French by A. M. Legendre (Paris, 1807). The 'Théorie des Nombres' of Legendre (third edition, Paris, 1830) has the advantage of coming later than that of Gauss (which itself came after the first edition of Legendre's), and of using methods and notations which are more familiar to the modern student.

Both are works of great originality: that of the German is condensed, and full of historical information; that of the Frenchman easier to follow, but, like most French works, deficient in precise historical reference. It is not a little singular that the two great writers on this subject should have been the men who, independently of each other, introduced the method of LEAST SQUARES.

For a notice of one prominent discovery of Gauss, see POLYZON and ROCCHHE.

The beginner in algebra may obtain some command over equations of a simple character, not exceeding the second or third degree, by a method which is, we believe, due to Playfair, or which is published in the collection of Paris works. Let the equation of the second degree, \(a = 0\), be transformed into a form which admits both sides being reducible to factors; for instance,

\[
y(ay + b) = (x - a)(x + b).
\]

If then \(x - a = b\), we have \(x = b + y\); and if \(y = 2a - b\), \(x = (a - b) + 2b\) + \(a - b\). Then

\[
x = \frac{(a - b)^2 + 2b^2}{a - b + 2b} = y - \frac{(a - b)^2}{a - b + 2b} = y - x.
\]

Assuming \(x\) at pleasure, \(y\) may be easily taken so as to make both \(x\) and \(y\) whole numbers; and the same method will succeed in many equations.

NUMBERS OF BERNOLLI. This name is given to certain numbers (we here see the mathematical use of the word, for they are all fractions) first used by James Bernoulli, in his 'Ars Conjectandi.' They are in fact (though not so considered by Bernoulli) the coefficients of the powers of \(x\) in \(1: (1 + x)^n\). We should hardly have them to place in our list of simple-expressions of numbers. Many of the differences in mathematics is by no means complete, were it not that they only appear to a sufficient extent in one English work that we know of (Peacock's Examples). Let

\[
\begin{align*}
\frac{1}{1 - x} & = 1 + x + x^2 + x^3 + \ldots
\end{align*}
\]

a form which it is shown to take. Then \(B_0, B_1, B_2, \ldots\) are what are called the numbers of Bernoulli, and the following list will show twenty-five of them, the first column being the sign of the number, the second its index, the 

the fraction, and the third its denominator. As far as \(B_2\) these are taken from Euler's Differential Calculus, all the rest (and the logarithms) from Gruner's Supplement to Kugel, which professes to take the additional numbers from a work of H. A. Rothes, and the logarithms from Eytelwein's work on the higher analysis.
Thus the coefficient of $x^9$ in the development of $\binom{x}{1}$ is 366, which is the number of words written by Moses in the book of Numbers.

---

The higher numbers may be approximately verified by the following rule. Let $p$ be the ratio of the circumference of a circle to its diameter; then

$$B_{p-1} = \frac{2 \cdot 3 \cdot \ldots \cdot 2x - 1 \cdot 2x}{(2x)^2} \text{ nearly}$$

We shall have some occasion to point out the use of the numbers of Bernoulli in the article Series, in which also misprints, if any should occur, in the preceding tables will be noted. The theory of these numbers will be found in Peacock's translation of Lacroix, Euler's 'Differential Calculus,' Lacroix's 'Differential Calculus,' 5 vols., and in a very elaborate article (Bernoullische Zahlen') in the work of Grassier already cited.

NUMBERS, THE BOOK OF, one of the books of the Pentateuch. In Hebrew it has two titles, "Numbers" and "Hosep," which is the first word of the book, and "in the desert," which is the fifth word in the first verse, and which applies to the whole book, as much as the events which it records took place in the desert. Its title in the Septuagint is "Aggei." Numbers, because it contains the censuses of the people of Israel (chap. i., iii., and xxxvii). The first four chapters of this book consist of separate accounts of commands given by God to Moses, while the Israelites encamped at the foot of Sinai, respecting the census and the classification of the people, and the duties of the priests and Levites. The succeeding chapters (v.-x.) contain various laws, most of which are additions to those before given in the books of Exodus and Leviticus; and the rest of the book is occupied with the narrative of the journeys of the Israelites, from the time of their leaving Sinai to their second arrival at the Jordan, and their encampment in the plains of Moab. The time over which the book extends is from the first day of the second month of the second year after the departure from Egypt, to the last day of the eleventh month of the fortieth year of the exode. This part of the book also contains various encampments.

We learn from the last verse of the last chapter that the book was written by Moses 'in the plains of Moab, Jordan near Jericho,' and consequently just before his death. Vayer has attempted to show that it is composed of distinct narratives written by different persons (v.iii., p., &c.), and De Wette adduces several passages which appear to disagree with each other, and with the parallel passages in the book of Exodus. (Lehrbuch d. Hist. Krit. Einleitung in d. A. T., p. 180.)

This book is quoted or referred to in the New Testament (compare Numb. xx. 11, with 1 Cor. x. 4, and Num. x. with John, iii. 14). The passage in chap. xxv. 17-21, generally understood as a prediction of the Messiah.

Rosenmiller's 'Scholia in Vet. Test., the work of Richerhorn, John, De Wette, and Horne, Gravina's Vater's Commentaries on the Pentateuch.'

NUMERIUS. [SCOLIACIDAE.

NUMERAL CHARACTERS. There are three simple and obvious methods of constructing symbols of numbers 1. By arbitrary invention. 2. By the use of letters of the alphabet. 3. By a system of repetitions of a unit card, as I, II, III, IV, &c., with marks of abbreviation. Some may doubt whether the first and third were ever really employed; but it is not known that any Indian numerals any other origin than the first, and third explains the Roman system with a degree of coincidence which is most extraordinary, if it be not absolutely coincident.

Distinct numeral characters are found to exist among theChinese, Indians, and Arabs, &c., and in the Orientals, Egyptians, Greeks, Romans, and others as in ancient use among Abyssinians. Various representations of these will be found in the 'Encyclopaedia Metropolitana,' article 'Arithmetics.' We shall here confine ourselves to the simplest examples of those systems which will be wanted by the student of ancient literature. Of these, as it should seem, the first system may belong (though it may be doubted whether it be class, the Hebrew and the common Greek system to second; the Roman, Phoenician, Phrygian, antique Greek, Egyptian, and Chinese, to the third class.

The system received from the Hindus through the Arabs, and now adopted throughout Europe, has been much altered in the forms of the symbols. [Anc. Mtric.]

The Hebrews used the letters of their own alphabet, giving the finals a separate and particular value, as follows:

<table>
<thead>
<tr>
<th>Letter</th>
<th>( \text{anc. Heb.} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>ל</td>
<td>1</td>
</tr>
<tr>
<td>מ</td>
<td>2</td>
</tr>
<tr>
<td>נ</td>
<td>3</td>
</tr>
<tr>
<td>ג</td>
<td>4</td>
</tr>
<tr>
<td>ד</td>
<td>5</td>
</tr>
<tr>
<td>ה</td>
<td>6</td>
</tr>
<tr>
<td>ו</td>
<td>7</td>
</tr>
<tr>
<td>י</td>
<td>8</td>
</tr>
<tr>
<td>ז</td>
<td>9</td>
</tr>
</tbody>
</table>

The use of the final letters as signifying numbers of a new date than the rest; the old system required the use of subordinate numbers to express 500, 600, &c. Numbers not expressed above were made by juxtaposition of letters denoting other numbers, according to a decimal system, the tens, among the Greeks only, the Egyptians two between 15, which, as 10-5 or 75, and made a word signify Creator, they wrote as 10-6, or 9. In a language like Hebrew it would be impossible to prevent every change of numbers from also standing for a word or syllable, so the Oriental nations accordingly frequently express sentences by dates. Thus 'Hooshang Shah is no more rendered into Persian, expresses in the numeral form the letters, the year 837 of the Hegira, the date of the death of that person.'

The Greeks, in some enumerations, have three methods of expressing numbers; but the first of those which consists in the use of the letters of the alphabet is the successive books of a work, as in the Latin, much a method of naming as of counting. Something more to the point is the old system which occurs on
in which the unit is represented by a single mark, five by 5 (the initial of HENT), ten by Δ (that of ΔΕΚΑ), and one hundred by H (that of ΗΕΚΑΤΩΝ). And in all cases five of any symbol are written by inclosing the symbol in the Greek alphabet. This ancient Greek method, as found on inscriptions (which, according to Heiblomn, is alluded to in a written work by Herodian only), is supposed to be as old as the time of Solon. The Egyptian hieroglyphic system is on the same principle, but without abbreviations; the symbol of ten resembling that just given for five.

In describing the later Greek notation, we leave out of view the extensions made by the mathematicians, the principle of which is described in ARITHMETIC. It appears most distinctly that the system was made either at a time when the Greek alphabet was in possession of more letters than it permanently retained, or that it was introduced into Greece by communication with some nation (the Phoenician, perhaps) which had some additional letters. The Vau of the Hebrew and Phoenician, which stands for six, and is wanting in the Greek alphabet, appears in their numeral system under the name τετεισγυνον βαυ, and is expressed by a symbol resembling ζ, not very unlike the Vau turned the other way. The Koph and Tsadi appear under the names τετεισγυνον κόφος and τετεισγυνον τσάδι, with symbols expressed in our types by 6 and 9; but the former is one behind its place in numeral signification, being 90 among the Greeks and 100 in the East; the latter takes the same general place as the final Tsadi in the Hebrew system. The word σικερ will be a useful guide to the letters beginning the several scales, as follows:—

<table>
<thead>
<tr>
<th>Letter</th>
<th>α</th>
<th>β</th>
<th>γ</th>
<th>δ</th>
<th>ε</th>
<th>ζ</th>
<th>η</th>
<th>θ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerical Figuraison 1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>⌁</td>
<td>⌂</td>
<td>⌃</td>
<td>⌄</td>
<td>⌅</td>
<td>⌆</td>
<td>⌇</td>
<td>⌈</td>
<td>⌉</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
</tr>
<tr>
<td>100</td>
<td>200</td>
<td>300</td>
<td>400</td>
<td>500</td>
<td>600</td>
<td>700</td>
<td>800</td>
<td>900</td>
</tr>
</tbody>
</table>

The Roman notation, including all the varieties which occur in printed works, is as follows—

<table>
<thead>
<tr>
<th>I</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>III</td>
<td>200</td>
<td>300</td>
<td>400</td>
<td>500</td>
<td>600</td>
</tr>
<tr>
<td>IV</td>
<td>700</td>
<td>800</td>
<td>900</td>
<td>1000</td>
<td>1100</td>
</tr>
<tr>
<td>V</td>
<td>1200</td>
<td>1300</td>
<td>1400</td>
<td>1500</td>
<td>1600</td>
</tr>
<tr>
<td>VI</td>
<td>1700</td>
<td>1800</td>
<td>1900</td>
<td>2000</td>
<td>2100</td>
</tr>
<tr>
<td>VII</td>
<td>2200</td>
<td>2300</td>
<td>2400</td>
<td>2500</td>
<td>2600</td>
</tr>
<tr>
<td>VIII</td>
<td>2700</td>
<td>2800</td>
<td>2900</td>
<td>3000</td>
<td>3100</td>
</tr>
<tr>
<td>IX</td>
<td>3200</td>
<td>3300</td>
<td>3400</td>
<td>3500</td>
<td>3600</td>
</tr>
<tr>
<td>X</td>
<td>3700</td>
<td>3800</td>
<td>3900</td>
<td>4000</td>
<td>4100</td>
</tr>
<tr>
<td>XI</td>
<td>4200</td>
<td>4300</td>
<td>4400</td>
<td>4500</td>
<td>4600</td>
</tr>
<tr>
<td>XII</td>
<td>4700</td>
<td>4800</td>
<td>4900</td>
<td>5000</td>
<td>5100</td>
</tr>
<tr>
<td>XIII</td>
<td>5200</td>
<td>5300</td>
<td>5400</td>
<td>5500</td>
<td>5600</td>
</tr>
<tr>
<td>XIV</td>
<td>5700</td>
<td>5800</td>
<td>5900</td>
<td>6000</td>
<td>6100</td>
</tr>
<tr>
<td>XV</td>
<td>6200</td>
<td>6300</td>
<td>6400</td>
<td>6500</td>
<td>6600</td>
</tr>
<tr>
<td>XVI</td>
<td>6700</td>
<td>6800</td>
<td>6900</td>
<td>7000</td>
<td>7100</td>
</tr>
<tr>
<td>XVII</td>
<td>7200</td>
<td>7300</td>
<td>7400</td>
<td>7500</td>
<td>7600</td>
</tr>
<tr>
<td>XVIII</td>
<td>7700</td>
<td>7800</td>
<td>7900</td>
<td>8000</td>
<td>8100</td>
</tr>
<tr>
<td>XIX</td>
<td>8200</td>
<td>8300</td>
<td>8400</td>
<td>8500</td>
<td>8600</td>
</tr>
<tr>
<td>XX</td>
<td>8700</td>
<td>8800</td>
<td>8900</td>
<td>9000</td>
<td>9100</td>
</tr>
</tbody>
</table>

The grammatical Priscian would have it that I denoted one, because the Greek word μια, with μ cut off, has τ as a first letter; that V is five, as being the fifth vowel, and ten, as being the tenth consonant, of the Greek alphabet. Any explanation of this system which endeavours at an alphabetical deduction must, as far as has yet been seen, the word σικερ will be a useful guide to the letters beginning the several scales. As most extraordinary coincidence:—

Imagine a person used to decimal counting by means of the fingers having recourse to simple counting by making a mark for each successive unit, as in a, b, c, &c. At ten he might be expected to make some symbol that his hands was completed, and the drawing a mark through the whole ten, as 10, would do the very well. Thus he might abbreviate, as at 5, retaining only the symbol of a unit and that of the line drawn across. The handful of ten, or one hundred, might be represented by retaining only the unit symbol and two ligatures, namely, that of the ten and that of the hundred, and all the ten tens, as at g. The ten hundreds would require a unit with three ligatures, or four strokes altogether, which, if they were written without taking the pen off, might be made as at h, which might degenerate into k, and finally into l. Again, when getting into two hundreds, we have m, and as I suppose them to suggest themselves as proper representatives of half a thousand, or five hundred. Similarly bisection of g and g or or and q would suggest p and r as proper symbols for the halves of ten and one hundred. The symbol δ has a resemblance to I, to X, to G, to G, A to M, m to D, p to V, and r to L.

We cannot find any precise information upon the time o. the commencement of the principle of local value which prevails to a certain extent throughout the Roman system, but it is certain, before a large number was denoted less than one hundred, denotes a subtraction, after it an addition. This principle does not appear in the Phoenician or Palmeryne notations, which otherwise much resemble the Roman in their principle of notation, though they approximate to pure vicesenary scales, both adopting distinct symbols for twenty.

The Chinese use three systems: the first, not very simple, and antient; the second, intentionally complicated, and employing symbols of words to denote numbers, predominating in deeds and other instruments, to render alteration difficult; the third, a simplification of the first, supposed to have been made by the Jesuit missionaries.

For further information on this subject of this article, will abundant references be seen in the article "Arabic" in the 'Encyclopaedia Metropolitana,' by Dr. Pencock.

The numerical system is termed applied to the art of representing numbers by distinct names and symbols, a sense in which the word is used by the oldest writers. Every theme on arithmetic must necessarily treat of this art and these things on this art of counting and representing the result of counting, on the goodness of which, slight and easy as any method may appear to which we have been habituated from childhood, the progress of the arts of life, to say nothing of the mathematician's sciences, is necessarily dependent. The time is gone by for a formal eulogy upon the benefits of any fundamental method of expression; we will therefore content ourselves with quoting a part of that which is found in the first English work on arithmetic, Robert Recorde's 'Arithmeticke of Gentles' (1557).

We quote also because it is an instance (the only one we ever met with in a mathematical work) of the species of doggerel comic verse afterwards in use on the stage (see the 'Comedy of Errors'), which has a sort of measure and rhyme, though printed in the form of simple prose in the work from which we cite (we put the syllables which are meant to rhyme in italics). 'Master. Wherefore in all great works are clerks so much desired? Wherefore are auditors so richly fed? What causeth geometers so lightly to be unhonoured? Why are astronomers so greatly advanced? Because that by number such things they find, which else would far exceed man's mind. . . . Master. Exclude number, and answer to this question: How many years old are you? Scholar. Mum. Master. So that if number thou answer all by mummers? How many miles to London? Scholar. A posk full of plums. . . . Master. If number be lacking, it maketh men dumb, so that to most questions they must answer mum. Scholar. This is the cause, sir, that I judged it so easy because it is no more than to write every while; for presently is not dainty, as the common saying is. Master. No; nor store is no sore, perceive you this? The more common that the thing is being needfully required, the better is the thing and the more to be desired. But in numbering, as some of it is light and plain, so the most part is difficult and not easy to attain.'

The earliest method of signifying a large number must have been such a one as the scholar uses above, when he designates a large number of miles as 'a posk full of plums,' namely, the multitude of some visible or well-known collec-
tion of units. The fingers of the hand, or of both hands, or the united number of fingers and toes, furnished natural collections of ten, on which the various quinary, decimal, and vicenary scales in existence have proceeded.

The transition from counting by tens to counting by dozens might have been caused by the facility of subdivision which the number twelve possesses, though we rather doubt the explanation, at least unless we assume that the division of the Roman As into twelve uncies is to be explained on the same principle. From this we think came the method of reckoning by dozens to be introduced throughout Europe, as would that by thirties, if the Roman coin or weight had been so divided.

Our present national system is stated by writers to employ the words unit, ten, hundred, thousand, million, billion, trilion, quadrillion, quintillion, sextillion, septillion, octillion, nonillion, &c. But the greater part of the public statement for the terms billion, trilion, &c., though defined by arithmetical writers, have never found their way into common use, the want of such large numbers having never been experienced. The French indeed have naturalised the term milliard for a thousand millions, a matter of public debt and revenue, which only shows how little the term billion has been used among them, since, according to their writers, the milliard and billion are the same things. Tonnal expressly says, that in his time (1790) there was no common reckoning from millonions made by millions of millions, &c., and the word millidio is noted as a vulgarism by him (neither is it among the recognised barbarisms of Ducange). Records uses nothing more than millions repeated; so that it seems the billions and higher denominations were a fancy of arithmetical writers, conceived after the time when elementary works ceased to be written in Latin. The probability of this is increased by their meaning different things in different contexts; thus, in one, the term is a million, in another, a million, a trillion, a million of billions, and each denomination is a million of times the one preceding; with the French and the other continental nations the billion is a thousand millions, and each denomination is a thousand times the one preceding. According to English writers, the number 1,234567891234567891 is one trillion, 234567891234567891 billions, 891234 millions, and 567891: according to the French writers, it is one quintillion, 234 quadrillions, 567 trillions, 891 billions, 234 millions, 567 thousands, and 891.

For common purposes these denominations higher than a million may be abandoned, it being remembered that all the figures on the left, after six are taken off on the right, are so many millions, and all above twelve figures so many millions. In written round numbers millions should be written as such, thus, 638 millions, not 638,000,000: in computation it is of course a different thing. Some authors seem to think it very scientific to parade ciphers, sometimes by the dozen, and so it is, no doubt, if they know how many ciphers billions, or a million or a million of millions; but no reader likes to stop and examine 6,000,000,000,000, when the words ‘million of millions’ would have done equally well.

The decimal system, made complete, supposes a point always to be placed at the end of the units, to separate them from the fractions which may follow. When there are no fractions, the point is useless, as in 675’ or 675’000, which is 675. The numbers on the right of the point, successively denoting tenths, hundredths, thousandths, &c. of a unit [FrACTIO], are in denomination. The very word have not received distinct names. The modern French call them décimales, centimes, &c.; and the attempt has been from then been made (see Wybrad’s ‘Tactometria’ 1650), to introduce centimes, millèmes, &c., into English, but with no success.

The principle of local value [Arithmetica], which distinguishes our system of numeration from that of the Greeks and Romans, is applicable to any system, whether decimal or not. If 10 stand for ten, that is, if units in the second column were ten times in value of the first column, nine numeral symbols besides the cipher are requisite; but if 10 had signified fifteen, it would have been necessary to have fourteen distinct symbols of number besides the cipher, since 10, 11, &c., stand for sixteen, seventeen, &c. and so ad infinitum, the explanation of our numerical language (being decimal) is not well calculated to give an easy comprehension of the change: we should rather invent a word for fifteen, or five and ten, say A; whence A one, A-two, &c. would be the spoken sounds answering to what we now call sixteen, seventeen, &c.; while, ten, eleven, twelve, thirteen, and fourteen would require new names not connected in etymology with ten.

The method of reducing a number, decimally expressed, to another in which the radix or base of the system (as we is that of the common one), is a, is as follows: divide the number successively by a, expressed in the decimal system, the remainders give the units, as, &c., of the new expression. Thus if 12376 is to be expressed in the quinary system, whose base is 5, we should have the followings:

$$5 | 12376 \quad \text{Rem.}$$

$$5 | 2475 \quad 1$$

$$5 | 495 \quad 0$$

$$5 | 99 \quad 0$$

$$5 | 19 \quad 4$$

$$5 | 3 \quad 4$$

$$5 | 0 \quad 3$$

Thus this exhibits both the reduction to the quinary system and the restitution of the decimal expression: but if the number had been given in the quinary system, it might have been reduced to the decimal system by the same rule, the base being in the quinary or quinary system, represented by 29, and the rule of division being performed by the use of five in the same manner as ten is used in the decimal system.

The quinary being supposed the old system, as now we come to the remainder 11, we have to invent a new symbol (say B), since 11, in the new system, is to stand for eleven. For further examples, see the ‘Library of Truth Knowledge: Treatise on the Study of Mathematics.’

In teaching the elements of numeration by the above [Abacus], it is desirable that exercise should be given in several different systems, were it only to prevent the formation of that impression which so many students long retain, that the decimal system is natural and necessary. The want of words for the denomination of every figure; this may be got over by using the letters A, B, C, &c. to represent them. Thus if the system be quinary, A, B, C, D, E as one ball on the second row or five on the first, B as one on the second row or five on the second, or twenty-five in the first, and so on. All the balls on the second row may be marked A. Those on the third B, &c.

NUMERATOR (or Numerator), the part of a fraction which states how many of the aliquot parts of a unit are taken, such as are described by the denominator. There being three, not of units, but of sevenths of a unit, 3 is the numerator.

NUMERIANUS, MARCUS AURELIUS, succeeded to the throne conjointly with his elder brother Caracalla, after the death of their father, the beginning of a.d. 212. Numerianus was with the army in Mesopotamia at the death of Probus; but instead of following up the advantages which his father had gained over the Persians, he compelled the army to abandon the conquests which had been so steadily and so lately made, and, trusting to the retreat weakness of the eyes oblige him to cast himself to the darkness of a litter, which was securely guarded by the Praetorians. All orders were obeyed by Arrius Aper, the prefect of the Praetorians, who was the father-in-law of the emperor. The absence of Numerianus excited the suspicion of the soldiers; and when the army, after a march of eight months, arrived at Ctesiphon on the Bosphorus, they insisted upon seeing the emperor: Arrius Aper led them to the body, and they only found the dead body of Numerianus, suspicion naturally fell upon Arrius; and an assembly of the army was accordingly held, for the purpose of avenging the death of Numerianus and electing a new emperor. Their re--
fall upon Diocletian, who immediately after his election put
Arrius to death with his own hands, without giving him an
opportunity of justifying himself, which might perhaps
have proved dangerous to the new emperor.

The virtues of Numerianus are mentioned by most of his
biographers. His manners were mild and affable; and he
was celebrated among his contemporaries for his eloquence
and poetry. He successfully contended with Numerianus for
the prize of poetry, and the senate voted to him a statue, with
the inscription, to ' Numerianus Caesar, the most powerful
orator of his times.'

(Vopiscus. Numerianus, Aurelius Victor, De Cesaris,
c. 39; Evutropius, ix. 12; Zonaras, book xii.)

NUMERICAL, as opposed to literal, in algebra, applies
to an expression in which the coefficients of a letter are all
numbers, and not letters. As opposed to algebraical, it
applies to the magnitude of a quantity, considered independ-
ently of its sign. Thus - 7 is said to be numerically
greater than - 5, though algebraically less. [NOTHING.]

NUMESIA'NUS, or NOMISIANUS, a physician, born
at Corinith, who deserves to be recorded as one of Galen's
tutors (Gaen. de Graecia, v. 2, b. xliii.); and the name of a
child, born of the marriage of an African, he used in
informing us in another place (Comment. in Hippocr.,
libr. 'De Natura Hominis,' Comment. 2), that Pelops, another
of his tutors, was also one of this physician's pupils. He
lived in the second century after Chrst.

NUMIDIA was originally bounded on the east
by the dominions of Carthage; on the west by the Mulucha, or
Molocath (Sallust, Jug., 19, 92; Strabo, p. 827. Caesabon),
the modern Mulaca, or Mohala; on the north by the
Mediterranean, and on the south by the Gaustuli. The
Roman province of Numidia was of much smaller extent,
being bounded on the west by the Amspasgas (Wadi-al-
Kebir), and on the east by the Tusca (Zain, Shaw), and
thus corresponding to the eastern part of Algiers.

The Numidians were originally a nomadic people, whence
they were called by the Greeks Nomades (No'mades), and
their country Nomadia (No'madia, Polyb., xxxvii. 3; compare
Sallust, Jug., 18; Plin., Hist. Nat., v. 2). This name seems to
have been originally applied not merely to the inhabitants of
the country called Nomadia by the Numidians, but to the
whole tribe of the Numidians, which was restricted, but to all the
nomad tribes of northern Africa; thus Appian (Bell. Cae., ii. 44) mentions the Maurusii
(Maur) as nomads. But when the Greek and Roman
writers speak of the Numidians, the term is usually limited
to the two great tribes of the Cappadocians. The Massinissa,
who extended along the northern part of Africa from the
Mulucha on the west to the Amspasgas on the east, and the
latter from the Amspasgas to the territories of Carthage.

When the Romans first became acquainted with the Nu-
midians, which was during the course of the second Punic
war, Syphax was king of the Massinissii and Gala king of
the Massyllii. Gala had a son of the name of Masinissa,
who was descended from both Galas, and hence was
named Masinissa. He was brought up at Cartagia, and was so highly
esteemed by Adherbal, that he promised to the young Nu-
midian his daughter Sophonisba in marriage. Before
the marriage took place, Masinissa accompanied Adherbal into
Syphax's territory (Sallust, Jug., 47), which is described by
the Carthaginians. But during his absence, the Carthaginians,
without the consent of Adherbal, gave Sophonisba in mar-
rriage to Syphax, in order to secure his co-operation against
the Romans. (Appian, Hist. Rom., vii. 10.) This induced
Masinissa to make a secret alliance with Scipio in Spain;
but the Carthaginians, having obtained information of his
proceedings, used every means to ruin his power. His
father Gala had died during his absence in Spain, and the
government had been usurped by one Mezetulus, who
obtained the support of the Carthaginians. However,
Masinissa, on his return to Numidia, defeated Mezetulus; but
he had scarcely obtained possession of the government, be-
fore he was attacked by Syphax, and compelled to leave his
kingdom and retire to the neighbourhood of the lesser
Carthage, where he remained with a small body of adherents
until the arrival of Scipio in Africa. (Liv., xxix. 29-33.) He
accompanied Scipio during the remainder of the war, and in
many engagements rendered essential service to the
Roman arms. It was principally owing to the courage of
Masinissa that Carthage was at length taken, and that the
to the hands of Scipio (b.c. 203).

On this occasion Masinissa obtained possession of Sophonisba;
but finding that his connection with her did not meet with
the approval of Scipio, who feared lest the daughter of Ad-
herbal might with some advantage be used in the alliance
with the Romans, he is said to have sent poison to Sophonisba,
and recommended her to destroy herself.

The great services of Masinissa did not pass unrewarded
by the Romans. At the conclusion of the second Punic
war he obtained the dukedom of Syphax, and became a
considerable part of the Carthaginian territory, so that his
kingdom extended from the Mulucha on the west to the
Cyrenaics on the east, and completely surrounded the small
district which was left to the Carthaginians on the coast.
(Appian, viii. 106.) Masinissa laid the foundations of a
great and powerful state in Numidia. He introduced the
arts of agriculture and civilised life, amassed considerable
wealth, and supported a well appointed army. He died at
the age of 90, b.c. 149. (Appian, viii. 106; Strabo, p. 833;
Polyb. xxxvii. 3.)

Masinissa left three sons, Micipsa, Mastanabal, and
Gulussa. The two latter died soon after the death of their
father, but Micipsa lived to b.c. 118, and bequeathed the
succession to his two sons, Adherbal and Antimachus,
the latter of whom was subsequently called Mezentius. He
was followed by a youth named Jugurtha, who was an illegitimate son of Mastana-
bal. Jugurtha, however, not content with a divided
sovereignty, murdered Hiempsal, and obliged Adherbal
to fly to Rome, where he appealed to the senate against
the usurpation of his nephew. Many of the Numidian
people were bribed by Jugurtha, and a commission was sent
to Africa in order to divide Numidia between Adherbal and
Jugurtha. The commissioners awarded the better part of the
country to Jugurtha; but scarcely had they left Africa,
when he was ambitious of the throne. Many of the Numidians,
however, had been bribed by Jugurtha, and it was agreed to
put him to a cruel death. When this news reached Rome,
war was declared against Jugurtha, which, after being
conducted on with various success, was at length terminated
by the capture and death of Jugurtha himself.

After the death of Jugurtha, the kingdom of Numidia
appears to have been given to Hiempsal II. (Hirtius, Bell.
Africa, 56), who was probably the nephew of Hiempsal
the elder. His successor was Micipsa, Hiempsal's eldest
son, by his son Juba I, who took an active part in the civil war
against Caesar. (Juba.) On the death of Juba I, b.c. 46,
Numidia was reduced to the form of a Roman province
by Caesar, who intrenched the government of it to his
cousin Sallust. (Dion Cass. We learn from Livy that Zama
was captured by the Romans, and it is well known that the
see of St. Augustin. It was called Hippo Regius.

The chief town in Numidia was Cirta (the modern Cos-
tantina, or Constantine), which was the principal residence
of Syphax, Masinissa, Micipsa, and Juba. (Costante-
na.) Hippo Regius, the second town in the province, was
situated near the coast about a mile and a half south of
Bona. (Bona.) It was founded by the Phoenicians (Sallust,
Jug., 19), and it is well known as the see of St. Augustin.

Hippo Regius distinguished itself from Hippo
Zarzytus in the province of Africa. It was a favourite place
among the Numidians, who made a great deal of war
against the Romans. At the mouth of the Tescus was the
town of Tabarca, the name of which is still retained in the
island of Tabar-
kah at the mouth of the river. South of Tabraca, probably
on the Tescus, was the important town of Vaga, or Vassa,
which is situated on the coast, and at the mouth of the
Tescus river. (Sallust, Jug., 47.) South-west from
Vaga was Tagaste, a free state according to Pliny (v. 4),
and celebrated as the birth-place of St. Augustin.

The position of Zama, near which the memorable battle
was fought between Scipio and Hiempsal (b.c. 209), is
uncertain. Some writers have considered it the same as
the modern Zamora, which is situated south-west of Setif;
but others, with more probability, identify it with the modern
Zahana, south-east of Cirta. We learn from the account of
Carthage (Liv. xxx. 29), which

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than with that of Zamarah. Zama was strongly fortified, and was occasionally the residence of the Numidian kings.

(Sallust, 

36., 

Juba fled to this town, after he had been defeated by Cesar at Thapsus, but the inhabitants refused to admit him within the walls. (Hirtius, Bell. Afr. 60, 61.) It is stated that Zama was destroyed by the Romans (p. 829); but it is mentioned by Pliny (v. 4) as one of the free towns of the province; and the name of the bishop of Zama occurs in the councils of the African church.

An account of the principal places in the western part of the ancient kingdom of Numidia, which was afterwards included in the province of Mauritania, is given under MAURITANIA. The physical features of the country are described under ALGERIA and CONSTANTIA.

The best account of Numidia is that of 

NUMISMATICS, NUMISMATOGRAPHIA, or NU-

MISMATOLGY, the science of coins and medals. [COINS; MEDALS.

NUNCULITE. [FORAMINIFERAE.]

N. [MONACHISM.]

NUNCIO (Nunzio, in Italian; Nuntius, in Latin) signifies a messenger, but is used more particularly to designate the ambassadors sent by the pope to foreign courts. The nuncio is generally a prelate of the court of Rome; if a bishop, he is called an 'legate.' Previous to the council of Trent, the papal nuncios in foreign countries acted as judges, in the first instance, of matters which were within ecclesiastical jurisdiction; but since that time they have acted solely as representatives from the Roman See of the respective bishops, in those countries only which are subject to the decretals and discipline of the council of Trent. In other kingdoms and states, such as France, Austria, Tuscany, &c., which, though Catholic, hold themselves independent of the court of Rome in matters of discipline, the nuncio has no jurisdiction whatever, and has merely a diplomatic character, like the minister of any other foreign power. (Père Richard, Bibliothèque Sacre, art. "Nuncio.")

NUNCUPATIVE WILL. [WILL.]

NÚNEZ, or NONIUS, FERNANDO, was one of the house of Gonzales, also called "El Pincoano," from Pintia Vacceorum, the former name of Vallaseca, now Valla-
dolid, where he was born in the latter half of the fourteenth century. Although a knight of the military order of Santi-
ago, he devoted all his leisure to literary pursuits and the diffusion of learning through Spain, where he promoted the study of the Greek, after that of the Latin language had been rendered easy by Nebrisins (Antonio Lebrija or Nebrija). Among the many eminent literary persons who followed Nebrija's steps, Pincoano was conspicuous, even before he had the honor to receive the further instruction from Philippus Beraldus and Govian, a celebrated Greek refugee. On his return to Spain, Nuñez brought back numerous Greek books with him; and Cardinal Cisneros, who admired his talents, appointed him Dean of the university, and afterwards Archbishop of Alcalá, and moreover en-
trusted to him and to Lope de Asturigia the Latin version of the "Septuagint." Endowed with a lofty spirit and a high patriotic feeling, which were fostered by the writings of antiquity which he, he fought in 1521 with the unsuccessful Commons of Castile against the tyranny of Charles V., or rather his courtiers, a set of unprincipled foreign adventurers, who took advantage of the young prince's vanity and inexperience. Being obliged to leave Asturigia, he went rather to Salamanca, in which university he had taught Greek, Latin, rhetoric, and the natural history of Pliny.

He died in 1553, above the age of eighty, at Salamanca, and left to that famous seminary his select library. He was buried for himself the following epitaph:—Maximum vitæ bonus mortis! Among his other great qualities he had that of being very abstemious, but although he abstained from wine, he was fond of inviting his friends and pupils to his table.

But the most celebrated of the "Complutensian Polyglot," Nuñez published "Annotationes in Senecae Philosophi Opera," the text of which writer he restored; "Observationes in Pomp. Melan.;" "Observat. in Hist. Nat. C. Pim.," which have often been reprinted; "Glosa sobre el "Libro de los principiantes," first printed in 1496; "Compendium Politicorum," in which he left incomplete in the midst of his inmi-

Númer was well acquainted with Spanish proverb, as skilful in applying them.

Gomez do Castro, or Gomezeus, in his work "De Rebus Gentis Fran. Ximen.;" Eramus, Lucius Mirannis Sedul. Lippsius, Nicol. Antonius, Isaac Vossius, Mariana, Tussar. and other learned men, on the high talents and virtues of Fernando Nuñez de Guzman.

This writer must not be confounded with Alonso López Pincoano, Médroz Cesáreo (physician to Charles V.), who composed, in his "Observations," a series of letters on the 'Philosophia Antiqua Poetica,' and extraordinary performance for the age, both as to substance and expression. It appeared at Madrid for the first time in 1596. This second Pincoano was the first modern scholastic to think for himself in this art; he established a philosophical system, and went farther than his master Aristotle. By a careful and minute study of all the writings of that philosopher, he discovered that his "Poetic" was but a fragment, for Aristotle refers repeatedly in his other works to a second part of the same "Poetic," which is lost; a fact which had escaped the notice of his previous commentators.

Pincoano endeavored to restore dignity to poetry, and to develop its true character; he treats minutely of the senses, and the various qualities of the understanding, and the pleasures of cultivated minds. He defines more poetically; imitation more precisely than the Greek philosopher. His style however cannot now be considered as a model either of written or conversational language.

NÚNEZ PEDRO. [VERNEAUX.]

NÚREBURG. [NÜRBURG.]

NÜRBERG, a very ancient city of Bavaria, in the circle of the Rezat, and formerly one of the most flourishing members of the Hanseatic League, is situated in 45° 57' N. lat. and 11° 4' E. long. Nürnberg stands in an extensive and sandy but highly cultivated plain, 945 Parn foot above the level of the sea, on both banks of the river Pernitz, which divides the city into two unequal parts; the smaller and northern is called the Sebaldis side, and the southern and larger the Lawrence side. The Pegnitz forms three islands within the walls, which are connected with one another and the city by seven stone bridges, and one suspension-bridge, which was commenced in 1824.

Though Nürnberg cannot be considered, properly speaking, as a fortified town, it is surrounded by an ad wall, which has eight gates and a great number of round and square towers (Stein says 365, Hassel 119), and a wall nearly 200 feet broad. The circuit within the walls is three miles and a half, within which space there are many square markets, and gardens. The streets are in general broad and well paved, but crooked and narrow. Nürnberg is very old-fashioned, retaining externally, with little alteration, the old Gothic style, and their internal arrangements recalling to mind the mode of private life of past ages. From the windows of the houses they are often adorned with paintings if they are narrow, but often a building or a poetical" to a parallel street. One of the most remarkable ancient buildings is the old fortress called the Reichsfeste, which was probably erected in the tenth century, under the emperor Frederick I., and the care which was confided in the middle ages to the burggraves of Nürnberg in the house of Hohensollern. This fortress stands on a precipitous eminence, and the exterior, having received no modern additions, is an excellent specimen of the ancient style. It contains the story of 249 paintings, and various paintings on glass. The town-hall, one of the finest in Germany, is 275 feet wide, and contains, among other curiosities, a number of paintings by Albert Dürer, Hirschvogel, and others. Almost all the churches, 8 Lutheran, 1 Calvinist, and 3 Catholic, are worthy of note for their architecture and the works of art which they contain. Two of St. Sebaldis contains the tomb of the saint adorned with fine statues of the twelve apostles, a noble altar, the celebrated crucifix by Veit Stoss, and painted glass windows of extraordinary beauty. The church of St. Lawrence is a fine Gothic edifice, and is extremely rich in old German paintings. To each of these churches a Late school is attached. Church of St. Ägidius, which was built in the Italian style at the beginning of the eighteenth century, has a fine altar-piece by Hans Stoss. Near this church is the gymnasium, in front of which the city erected, in 1826, the statue of Melanchthon, by whom
that institution was founded in 1596. The church of St. Clara has paintings on glass, of the year 1278. In that of the Holy Ghost the regalia of the empire were formerly kept. By order of the emperor Sigismund in 1424, and likewise many pretended relics of the Passion of our Saviour. The former Dominican church contains the city library of 20,000 volumes, with a collection of the works of Melancthon and of works written at the time of the Reformation. The tail-feathers of many mercurious and well-conducted public institutions of every kind, such as the gymnasia, the Polytechnic Institution, a great number of schools for all classes; 13 free-schools, in which the children are supplied with books, clothing, and bread gratis; a great number of manufactures, which has founded a school of industry for above 300 girls, and a Sunday drawing-school for the sons of mechanics, in which there are nearly 400 pupils; a Bible Society and a great many collections, both public and private, of works of art, antiquities, &c.

Before the trade with the East Indies took a new direction, after Vasco de Gama had doubled the Cape of Good Hope, Nürnberg was one of the most important commercial cities in Europe, in 1797, to nine millions with the rich productions of India, which it received from Italy and Persia, whilst it immediately became the source of its prosperity. The residence of the burgomasters (from the year 1060) and occasionally that of the emperors was a great advantage, and, above all, its manufactures benefited very much from the influence of the fiscal advantages of other states to the advantages of commerce, the ravages of the Thirty Years' War, dissensions between the nobility and the citizens, and an increasing load of debt, caused Nürnberg gradually to decline. Yet its trade is still considerable, and resembles, of its own manufactures in iron, steel, and brass; and in hardware of all kinds, turnery, looking-glasses, musical instruments, paper, engravings, painters' colours and pencils, glass, porcelain, watches, calices, &c. In the numerous inventions of the latter, the advantages of Nürnberg toys, most of which are however made by the country-people in the hilly and wooded tract between Franconia and Thuringia, causes the trade in them to be very extensive and profitable. As there is an annual fair, at which a great deal of business is done.

Nürnberg is first mentioned in history in 1050, and obtained its first charter in 1219. As a free city of the circle of Franconia, celebrated for its industry and commerce, and for its production of fire-arms, it was for a long time the most famous for manufactures in the world. In 1053 the inhabitants were allowed to demand its freedom among all the changes made in Germany in 1803. It had a territory, for the most part well cultivated, nearly 500 square miles in extent, with 40,000 inhabitants, and a revenue of 800,000 florins; but the public debt amounting to more than millions of florins, the revenue was not sufficient to pay the interest. The differences with the king of Prussia, who took possession of part of its territory, incessantly increased its difficulties, till the Act of the Confederation of the Rhine assigned over its territory in 1802. The territory of Bava was now given up, so agreeable to the inhabitants. The population of Nürnberg, including the suburbs and the territory, was officially stated to be, in 1826, 39,628, of whom 3200 formed the garrison. The latest accounts we have seen (1839) make the population 54,453. The churches of Nürnberg are Roman Catholic, and the great majority Lutherans.

The great painter Albert Dürer was a native of Nürnberg, and also Melchior Pfinzing and Hans Sachs, the poets, and Martin Behem, who made the first serviceable telescope. For which the world is indebted to Nürnberg are watches (first called Nürnberg eggs) by Peter Hele, the bell by Heinric Fraxdorx, the air-gun by Lobzinger, the clarionet by C. Danner, brass, and by the Zaunwirt and the lock for fire-arms by F. Hottel, known, and many others.

The descriptions of Nürnberg and of the public edifices are very numerous: among them are the Nürnbergisches Tachenbuch, 1839; the Nürnbergcher Jahrbücher, Hagen's 'Nüras, &c.

[6] [NECIER.]

NUTCRACKER, the name of an Insecatorial bird, rarely seen in Britain, and whose place in the system it is rather difficult to fix. Some of its habits, and the worn appearance of its tail-feathers, together with the nesting in hollows of trees, indicate a relationship to the Picider. Its manner, which are said to resemble those of the Jay, and other circumstances connected with its food and organization, bring it into alliance with the Corus, to which it is generally supposed to be closely related by ornithologists, and so placed as to approximate either to the Woodpeckers or Starlings. Mr. Vigors considers it as assimilating to the latter family, and especially to the genera Cissa and Barita. Mr. Swainson makes it a subgenus of Corus in his subfamily Corviinae, placing it immediately after the subgenus Pica, and immediately before the genus Barita. The Prince of Musignano arranges it also under the subfamily Corviinae, among which it occupies the last place in his 'Geographical and Comparative Ornithology.' The breeding-places of the species are the high woods of Sicily, and the valleys of some of the streams of Tarsus.

Nicrophorus. [6]

Generic Character.—Bill conical, longer than the head, straight, the upper mandible having the culmen rounded, overhanging the lower, both terminating in an obtuse and depressed point. Nostrils basal, round, open, concealed by hairs directed forwards. Toes, three before and one behind, the under two being united at their base. Tarsus long, thicker than the middle toe. Hind-foot long and pointed, the first quill shortest, the fourth and fifth longest. (Gould.)

This genus is generally considered to comprehend only two known species:—the bird whose English name heads this article, and Nicrophorus heminippus, which bears a considerable resemblance to our own Hymenopus, species, as is described and figured in Mr. Gould's 'Century of Birds,' from the Himalaya mountains. The student should however bear in mind that the Prince of Musignano and Mr. Audubon, both high authorities, the former from his extensive and accurate knowledge of genera and species, and the latter from the great attention which he has paid to the habits of the birds of America, include the Corus Columbianus of Wilson in the genus Nicrophorus as a select as the European species, Nicrophorus Cynorhacatus. Nicrophorus. [6]

Cynorhacatus. [6]

Description.—Size about that of the Jackdaw, but the tail is longer. Plumage reddish brown; the body, with the exception of the head and rump, dappled with black; the white spots with the exception of the belly and underparts; the wings and tailblack, shot with green; the feathers of the latter (except the two middle ones) tipped with white. Bill and legs brownish black. Sexes, as in the gulls generally, nearly alike. The female is, if anything, a little smaller and her plumage less lively.

This is the Corus Cynorhacatus of Linnaeus; Cynorhacatus of Willughby; Cause Noix of the French; Ghiandita Nicrophorus of Stor. degli Ucc.; Noctalia of Savi; Kurz and Langschmid (Nabbinger Fisch) of Brehm; Tunnen Seher (Fine Jay) or Turiicher Holzschreyer of Friech; Notknecha, Notkakra, of the Swedes; Noddekrige of the Norwegians; Notkraeka of Brunnh; Nussbrabbe of Meyer; and Aderyn y man of the ancient British.

Habits. Food.—Reproduction, &c.—The descriptions of the Nutcracker are scarce; those who have observed it, to resemble in some degree those of the Jay, and some of its habits those of the Woodpeckers. Like the former it feeds on nuts and berries, as well as on the seeds of the pine, of which it is supposed to be fond; and it will often climb the trunks and branches of trees, tapping the bark with its bill to start the insects and their larvae that may lurk beneath, and devour them. They are said to crack nuts much in the same way with the Nutcracker. The nest is formed in the hollows of trees, which the bird is supposed to enlarge after the manner of the woodpeckers. The eggs are five or six in number, of a yellowish white or grey, with
a few spots of bright grey brown. Temminck states that it
sometimes devours young birds and eggs.

Geographical Distribution.—Central Europe. The bird
is a rare visitant to Great Britain, and does not appear to
have been seen in Ireland. The only one Pennant ever
heard of was killed near Mostyn in Flintshire. Montagu
mentions one that was killed in Kent, and states that one
was seen by an accurate observer near Bridgewater. He
also notices two others, which were shot in 1808, one in
Devon, the other in Cornwall. Mr. Selby mentions one
that was seen in Netherwitton Wood in Northumberland.
Mr. Reid, of Pontzance, gave Mr. Yarrell information of
one that was seen on a tree on the banks of Hoce Lake.
It is recorded by Dr. Moore as having been shot in Devonshire
near Washford Pyne Moor. Another is said to have been
lately noticed at Pepper Harrow Park, lord Middleton's
seat. Mr. Macgillivray gives instances of its having been
shot in Scotland.

Temminck records varieties of pure white, or yellowish
white, with deeper spots; sometimes with the wings and
tail white.

The Nutcracker.

NUTHATCH, the vernacular name for a Scansorial British
bird, with much of the habits of the Woodpeckers, and
which may be taken as an apt illustration of the genus Sitta
of Linnaeus.

Mr. Swainson places the genus in the subfamily Sittinae,
being the second of his family Certhiadae. The Prince of
Musignano makes it the first subfamily of that family.

Generic Character.—Bill straight, cylindrical, slightly
compressed, subulate, acuminate. Tongue short, horny,
and armed at the point. Nostrils basal and rounded, partly
hidden by reflected bristles. Feet with three toes before
and one behind, the outer toe being joined at its base to the
middle one; hind toe of the same length as or longer than
the middle one, with a long and hooked claw. Tail of
twelve feathers. Wings rather short; the first quill very
short, the third and fourth the longest. (Gould.)

Example, Sitta Europaea, the Common Nuthatch, or
Nutjobber.

Description.—Plumage above fine blue grey; quills and
base of tail-feathers, except the two middle ones, black, the
outer tail-feather on each side with a black spot near the tip.
A black band passes from the bill through the eye down
the sides of the neck, ending abruptly near the shoulders;
throat whitish; rest of plumage below russet brown blending
into chestnut on the flanks; bill and feet black; iris
hazel. Sexes alike.

This is in all probability the Sitte (22irr) of the Greeks,
and Sitta of the Latin. It is the Ziolo, Picchio grigio,
Boscapro, and Picchio formagio of the Italians; Muratoro
of Savi; Torquepot and Pic-macon of the French; Kleiber
and Blauspecht of the Germans; Noteca and Notopacha
of the Swedes; Spekt-meise of the Danes; Nat-Bake of
Brunnich; Kiener, Nussacker, of Kramer; and Delor y
caçadores of the Spaniards.

Habits, Food, Reproduction, &c.—Like the Woodpeckers
and Creeper, the Nuthatch runs with facility upon and
about the trunks and branches of trees; but the tail, which
is short and rounded, is of no assistance to the bird in its
progress. Unlike the Woodpeckers however, the Nuthatch
runs with the head downwards as well as upwards and
indeed the former position of the head appears to be the
favourite one; it generally alights on a branch with the
head in the downward position, and sleeps in that posture.
It is almost constantly in motion. Its food consists of
seeds and their larvm, berries, and nuts. The latter it
uses in some chink, and cracks them by repeated strokes of
its bill. 'It is a pretty spectacle," says Willughby, 'to see
him fetch a nut out of its beak, place it fast in a crack, and
then, standing above it, with its head downwards, striking
it with all its force, break the shell and catch up the kernel.
The same author found beetles in the muscular stomach of
a gizzard of one opened by him. The billerd gives the
Nuthatch but comparatively little trouble; but the more
deciduous hazel-nut calls forth greater energies, and when employed upon one of those nuts, the bird makes the
neighbourhood resound with the strokes of its bill. Its
call-note in the spring is a clear shrill whistle. The nest is
generally made with only a few dry leaves in the hole of a tree, and the
eggs, which are from five to seven in number, are of green
white spotted with reddish brown. If the hole selected be
too large, the bird plasters up a part of it with mud, and will
renovate the plaster if destroyed, whence one of its French
names.

The female, when surprised on the eggs or her young,
makes a most determined defence with bill and wings;
hissing at the intruder violently at the same time. It
seems indeed to be a very attached bird.

The Old French quatrain says—

Le Tourgepot et sa femelle ensemble,
Virent en paix tout le long de l'Estuaire,
Percu par l'on dit, que quel en arrivera
A son message au Tourgepot ensemble.

Of its bravery and courage when made captive, a p.a.
story is told in the 'Magazine of Natural History.' A Nuthatch
had been winged by a sportsman, and was put
into a small cage made of oak and wire. During a night or
day, the period of his confinement, his tapping labour
was incessant, and at the end of that time the wood work of
his prison was pierced and worn like worm-eaten timber. His
impatience of his situation was excessive; he essayed to
escape were unremitting, and displayed much cunning and
intelligence. He was fierce and fearlessly familiar, un
voraciously devoured the food placed before him. His
hammering is described as having been peculiarly labor
ous for he did not peck as other birds do, but taking a firm
grasp with his great feet, he turned upon them as a key
pivot, striking with his whole weight, and thus
assuming with his body the appearance of the head of a hammer
motion. This unfortunate bird sank at the close of the
second day under the combined effects of his exertion.

Common Nuthatch.
assiduity, and voracity. The Rev. T. L. Bree mentions one
which he caught in a common brick trap; when the bird
was found, the bill appeared to be truncated, and he inferred
that it had been fairly ground down to about two-thirds
of its original length by the pecking of the bird at the bricks
in its efforts to contrive a possible trap.

Geographical Distribution.—Europe generally. Tem-
mink notes its range as extending far to the north and
south, and as rather abundant in central Europe. Mr.
Selly traced it in Britain as far north as the banks of the
Wear and Tyne; and it is noted in Mr. Thompson's Irish
list.

Mr. Gould describes and figures two other species, Stilae
rupesstris and Asiatica, in his 'Birds of Europe.'

The genus is found in India and America; and there are
closely allied forms in the Indian Archipelago and in New
Holland.

NUTMEG. [MYRTISTICA.]

NUTRITION. One of the chief differences between
inorganic and organic bodies is, that the former retain their
form as well as their characters by a passive resistance to
change; the latter by a constant change in their particles, in
which those that in the constant actions of life or by the influence
of external agents have been destroyed, are replaced by
others similar to themselves. This constant change is effec-
tive, and is forever upon which the whole of the progress
of the general process of assimilation, by which living
bodies convert the materials which they derive from their
food into substances like their own, and appropriate the
materials thus changed to their own increase or repair. The
several parts of the body are thereby more or less altered,
day by day; the animal's mass and its tissues are thus
variously altered by digestion, absorption, respiration, and by
all the other changes which the blood or other fluid under-
goes in its passage to the several parts of the frame; these
changes constitute the process of assimilation, at the
end of which each cell or part of it, that is, the animal's
growth, forms a homogeneous and homogeneous mass of nutritive fluid
which is required for its own growth or repair; muscle abstracting
particles to form muscle, nerves from the same fluid abstracting
particles to form nerve, &c. The constant change of particles goes on in the
majority of the tissues of the living body may be considered
certain. It is evidently necessary from the nature of the
case; for the living body is exposed to the same external
agents as inorganic matter is, and all its actions are so
many more sources of waste to each tissue. Some constant
power of repair must therefore be requisite to maintain
living bodies in a state of integrity against these constant
sources of waste; and that power is exerted in nutrition.

A change in the relative sizes of living bodies proves
that the size of the whole body remains throughout life, or a great portion of it, its
form and composition less altered than the most solid of in-
organic matters exposed to similar influences. Within cer-
tain limits also, the greater the waste, the greater the
nutrient force, and the more active must be the process of
nutritive assimilation; the size of the muscles, so far from being decreased, is
ultimately increased, the effect of nutrition being not only to replace that which was destroyed, but to supply a certain
quantity more. We may clearly observe an application of this
law in the cuticle; that in the palm of the hand is more than twice as thick as that on the back of the arm,
yet the former is subject to the most friction; and if the friction of the palm be greatly increased, the cuticle, notwithstanding
the greater waste, increases in thickness, a yet greater repair, so as to defend the subjacent skin and the
greater source of injury to which it is exposed.

It is true that when the body does not change in any of
its sensible qualities, we cannot be so well assured of any change of particles still going on; structure, however, is assumed to be the
original part of nutrition, the removal of old and addition of new particles, which at other times we trace
producing either an increase or decrease of the body, as one or the other of them predominates, are exactly balanced.

If we take a whole organ, like the heart, we find that in advancing years of
childhood to manhood, it increases not only in its whole bulk, but also in the size of its cavities; and that, at
every period of life, the size of the cavities and the thickness
of their walls bear nearly the same proportion, so if only an addition were made to the exterior of the heart
of a child, its whole bulk would be increased, but the size of its cavities would be disproportionately small. We must
therefore assume that substance is removed from the inte-
rior of the heart, at the same time, though not in exactly
the same quantity, that substance is added to its exterior.
In like manner, when the heart diminishes in size, as it
usually does in persons labouring under consumption, ma-
terial must be at the same time abstracted from the exterior,
and, in rather a less proportion, added to the interior.
Mr. Thompson's deduction is, that this decrease or increase must be
equally as the small ones; so long as they preserve the
same form and proportions, no change of size can take place
without the concurrence of the two processes of nutritive
deposition and absorption; when the former preponderates,
the heart will increase, and when the latter it will diminish;
the former, when connected with disease, is named Hypertrophy [HYPERTROPHY], the latter Atrophy.

The coincidence of these two processes, where any change
of state takes place, being thus proved, and their continuance,
when no such visible change occurs, being necessary, we
may fairly assume that in the latter case, in the state of
nutritive equilibrium, they still continue, though their op-
posite effects being exactly balanced, the ultimate result
not discernible. Popular belief, adopting the idea as one of
whose truth there could be no possible doubt, has even
assigned the periods of time in which one whole set of par-
ticles is removed and replaced. There is no evidence of such calculation, or any estimate of the period in which an entire change is completed probably
varies greatly in different tissues and different external cir-
mstances, and in the bones and teeth it is probable that
the particles once deposited are never removed, so long as
they occupy their character.

The process of nutrition is concerned in the production of
two apparently different results—that of development and
that of growth. In development the added particles
merely increase the size of the part, but produce a change
of form also. Thus, the child increases in size, and the
period in which an entire change is completed probably
varies greatly in different tissues and different external
circumstances, and in the bones and teeth it is probable that
the particles once deposited are never removed, so long as
they occupy their character.

These two nutritive processes, though in the period of life
previous to the adult age they are usually concurrent, may
go on independently of each other. Thus the body may be
deficient in development, some part of it being monstrous,
that is, remaining of the same form as that which it had in
the embryonic state [MONSTERS], and yet with this defect
in form it may increase in size, for monsters are commonly
larger than their normal companions. As in growth, so in
development and form, the body, or some part of it, may be
deficient in size. A dwarf is an example of a defect of
growth; a hare-lip, a cleft palate, an abnormal unossified
cartilage, are examples of defects of development: both are
dead examples of the same law, nutrition, but the failure is in each
in a different direction.

One of the most important facts regarding the process
of nutrition is that lately discovered by Dr. Schwann of
Berlin (Mikroskop. Untersuch. über die Übereinstimmung
der Thiere und Pflanzen), that all the tissues of the body,
however different in their fully developed state, yet originate
from the same fundamental forms, and up to a certain
period of their development pass through the same series of
named cells. He has shown that the law of development from
these cells, which Schleiden had proved to obtain in the formation
of all vegetable tissues (Beiträge zur Phylogenie, Müll.
Arch., 1838), holds with equal truth in all the animal
tissues, and thus that in their first periods of existence all
these tissues are composed of the same kind of elementary
particles. The great principle of formation is briefly this:
that a living but amorphous substance, to which the name of cyto-
blastema is given, minute roundish corpuscles first form.
Around each of these a layer of organic substance, being
at first amorphous but becoming more and more defined as
a spherical or elliptical cell enclosing the corpuscle in or upon
its wall. Around or rather upon this cell, a second cell next
forms in the same manner as the first had, and at a part
of its walls the first attaches itself, thus forming the nucleus of the cell. These cells, containing nuclei,
which again enclose one or more corpuscles, may be re-
garded as the original forms of which all the solid parts
of the body are composed, or from which, altered according to
various but certain laws, they are all produced. As ex-

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samples of such primary cells in their simplest form and separate, we find in the animal body the blood fibres, which float in a quantity of fluid cytotubulaemia. Similarly, star-like cellular rows are perfect, Nehayetu-l-arab.

They are separated by a larger quantity of intervening substance, the cartilages, bone, teeth, in which the primary cells constitute the peculiar corpuscles by which those substances have been long distinguished, and the intervening substance, which forms the greater part of the tissue, is analogous to the soft or fluid cytotubulaestes of other parts. In these tissues also, the cells begin to acquire some peculiarities of form, sending out branched canals from their sides in a star-like manner, and becoming elongated. In the next degree similar cells, existing in the earlier periods of the body, but course of its development, more peculiar forms, lengthening into the form of fibres and then splitting up into bundles of filaments, so as to form the fasciculi of cellular tissue, tendons, and elastic tissue, which remain connected by a very small quantity of the amorphous cytotubulaestes. In the course of this splitting into fibres, we find a number of cells arranging themselves in rows and adhering together, till, by the absorption of their attached membranous walls, their cavities open into each other and form the continuous hollow tubes which are the main kind of elongated secondary cell, which, continuing to grow in length and having peculiar substances deposited in its interior, acquires the characters of the fibres of peculiar tissues, as of the muscles or the nerves. In other cases each cell elongates and branches, and becomes connected with others which like it retain their cavities, so as to form together a series of tubes in the form of a network, which thus make up the capillary blood-vessels. Each tissue thus formed from a series of cells increases in the direction of the increase of primary cells or their elementary forms developed from them, by the interstitial deposition of particles within their tissue or in their cavities, or it grows by the formation of new cells within the tissue interposed between those previously existing, or (though very rarely) by growth of development of young cells within the older ones.

The material of nutrition is in animals obtained from the arterial blood, which is constantly sent in the vessels distributed amongst or near the elementary structures of each tissue, and the proper act of nutrition is performed by the power of the blood-vessels, as has been commonly supposed, but by the cells and the structures analogous to them, which convert the common nutritive matter drawn from the blood into their own proper tissue. The blood-vessels are only vehicles of the materials of nutrition, and the difference commonly made between growth by intussusception, or deposition within the tissue of a part, and growth by apposition, or deposition on the surface of a part, is more apparent than real. The parts that are said to grow by apposition, or in which vessels do not run through the very substance of the tissue, but only on one side of it, as the cuticle, the vessels for the nutrition of which run in the subjacent skin. In these the formation of cells from the nutriment poured out from the blood-vessels takes place on the surface of the skin, though they may undergo various changes when removed to a short distance by fresh depositions beneath them. In vascular parts, on the other hand, the nutritive matter is diffused in all the interstices of the tissues, and the nutritive matter, and therefore in all parts of the interior of the tissue; but here also the development of the nutritive matter must take place in layers concentric with the blood-vessel from which it was poured out, and therefore by apposition, though, with reference to the organs of the body, the term growth by intussusception. The formation of fresh cells is therefore always by apposition on those already existing; but the cells and the elementary tissues immediately developed from them increase by intussusception, that is, by the growth of the tissue in the interstices of the interexisting, or in the cavities which the membranes of the cells already formed surround.

Thus the process of organic nutrition is widely different from that by which inorganic masses increase in size, and crystallization, which, if alone existed, would require definite form as it increases, can alone be compared with organic growth. In crystallization the addition of similar particles is entirely by external apposition, and the crystal has no power of attracting the particles of any sort other than those of its own nature, and generally, contrary, not only attract particles into their interstices, but alter them on their passage, decomposing them into their previous elementary composition, and reconcentrating them into matter like their own.

In healthy nutritive parts, each part appoited passionate similar to its own, or differing according to certain laws of development; in disease, parts frequently appropriate the substances than their own, and all the solid products of various diseases may be regarded as the effects of similar phenomena, according to the laws of normal development, and are only mere because of out of place, as cicatrices, adhesions, and the similar products of simple inflammation; others are produced by the deposition of substances different from any of those already existing, and develop in the products of various tumours. The former are composed of a tissue similar to cellular tissue, but the injuries of parts are partially repaired by it, because the new tissue, which in all cases nearly the same, differs in many of its characteristic in the tissues, in which lengthening.

The most complete exercise of the process of nutritive repairing injuries, whether from accident or disease, is exhibited in the regeneration of parts, but in man and the higher animals there are but few examples of a perfect reproduction of the parts. The deposition of different or non-nutritive tissues are probably the only instances which a tissue destroyed by disease or internal injury is replaced by one similar to itself.

In all these cases of repair or regeneration of tissues, the same process of the diffusion of nutritive matter and the stages of formation and alteration of the cells gone through which is observed in the first development of the tissues. But the process fails before the higher characters of nutritive matter can be restored to the lower degree of development. As far as also they have at present examined, the various morbid growths appear to be formed on a similar plan, and to proceed from a formation of primary cells.

NUWAYRI, a mineral which occurs crystallized in its natural form a square prism. Cleavage parallel to the four planes. Fracture uneven. Hardness 4 to 4.5. D. 2.61. Lustre vitreous. Translucent. Specific gravity to 2.8.

It is found at Bolton in Massachusetts imbedded in gravel.
narrative of the conquest of Africa, Spain, and Sicily by the Saracens, together with a chronological history of the sultans of the family of Umeyyah, who filled the throne of Cordova from A.H. 138 to 428 (A.D. 755 to 1036), and a short account of the principal events of their reigns.

Nuwayri died, according to Haji Khalifah, in the year 733, in the Hijra, at the age of 50. Among his other accom-
plishments his biographers say that his hand-writing was very fine; indeed he seems to have made a trade of it. for Soyutti, in his History of Egypt (Ar. MS. in the Brit. Mus., 7331, f. 127), says that he made eight transcripts of the large collection of Mohammedan traditions, by Bokhari, entitled Sahih, for each of which he was paid the enormous sum of one thousand dirhems, or about sixty-five pounds sterling. He dedicated his large work to Almálek Amin-nasser Kalaum, sultan of Egypt (reigned from A.H. 678 to 699), a liberal patron of letters, by whom he was munifi-
cently rewarded.

Complete copies of Nuwayri's work are exceedingly scarce. We are however assured that it is entire in the library of the university of Leyden. The Escorial library possesses one volume, containing parts xi. and xii. (Catal. No. 1637.) There are also several loose volumes at Paris belonging to differ-
ent sets, and among them one supposed to have been written by Nuwayri himself. (Bib. Reg. Parti. Cat., No. 702.)

Various extracts from the work of Nuwayri have been published at different periods. Reiske was the first who mentioned the work, in his Prodigia ad Hagi Khalifae Tabulas. Leyden, 1766. Albert Schultens next gave a slight
treatment of the historical part of his work, together with a few extracts from it, at the end of his Monumenta Vetustiora Arabum, published at Leyden, in 1746. Again, in 1786, Reiske made use of it for his Historical Notes, pub-
lished as a continuation to his translation of Abd-i-field Hafiz, 1789-94. Schultens published also a Latin translation of some fragments of Nuwayri in the collection entitled Historia Vetustissimi Imperii Joctanidarum in Arabia Felice.' That chapter of the fifth femn which treats of the conquest of Sicily by the Mohammedans was next translated, first into Latin, by Rossino Gregorini, and printed in folio at Palermo, 1790, and inserted in the collection entitled Rerum Arabicarum quae ad Historiam Siculam spectant, amplissima collecto,' and then into French, by Mr. J. J. A. Gaussin; and Mr. James Lassen Rasmussen has lately published, in his Additamenta ad Historiam Arabum ante Islamismum, Copenhagen, 1821, some fragments of the same work, in Arabic and Latin, respecting some curious customs of the Arabs who preceded Mohammed.

Notwithstanding all this, Nuwayri's work is still imperfectly known, and it is to be regretted that the historical part—at least that concerning the settlements of the Arabs on the continent of Europe—has not been published entirely, as it would throw great light on the history of the middle ages.

Haji Khalifah's Kashfu-th-Mubain, a bibliographical

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NYCTICERUS. [PRAVONDR.]  
NYCTICORAX. Mr. Stephens's name for a genus of Grallatres, or Wading Birds, belonging to the family Ar-
deadae (Herons and Granes). Mr. Swainson has changed the name to Nycticorax; but besides the inconvenience arising from the change, the generic name Nycticorax is a hybrid word derived from Greek and Latin roots, and there-
to objectionable.

Generic Character.—Bill very strong, rather longer than the head, compressed; upper mandible curved towards the point; maxilla sulcated for three-fourths of its length and emarginated; culmen rounded; toma of both mandibles straight and sharp, that of the under mandible entering within the upper one. Notorius basal, longitudinal, placed in the furrow of the maxilla, and covered above by a naked membrane; lores and orbits naked. Legs of mean length, slender. Toes three before and one behind; middle toe shorter than the tarsus, exterior toe connected by a mem-
brane to the middle one as far as the first joint. Claws short, falcated, that of the middle toe pectinated. Tibiae naked for a short space above the tarsal joint. (Gould.)

This form, of which at least seven species are now known, is widely diffused. Species occur in Europe, Asia, Africa, and America; and have been found in Manilla, New South Wales, and Tierra del Fuego.

We select as our example Nycticorax Europaeus, Ste-
phens; Nycticorax Gardeii Jard.; Ardea Nycticorax, Linn.

Description.—Old Birds—no difference in that stage of
life between the sexes. Top of the head, back and scapu-
laris, black with blush and greenish reflections; three very white narrow feathers, six or seven inches in length, taking their origin at the back of the head just above the
nape, and descending backwards; lower part of the back, wings, and tail clear ash-colour; forehead, space above
the eyes, throat, front of the neck, and lower parts white; bill

than the spots; head, neck, and lower part of the body
striped transversely with the same colours. In some
individuals the plumage is more brown than it is in
others.

Habits. solitary. The bird haunts hollow trees, and
prefers those which are near the water. [Night-jars]
black, yellowish at the base of the lower mandible; iris red; feet yellowish green; length rather more than 1 foot 8 inches.

Young of the Year.—The three long nuchal feathers absent; top of the head, nape, back, and scapulare of a muddy brown, with longitudinal bright red dashes on the centre of each feather; rest of the plumage white, with some brown spots; outer side of the front and sides of the neck yellowish, with wide brown borders; coverts of the wings and quills sahy-brown, marked with great yellowish white spots at the extremity of each feather; lower parts clouded with brown, white, and ash-colour; middle of the belly whitish; arctic and point of the bill brown, the rest greenish yellow; iris brown; feet olive brown.

In this stage it is the Ardea macula, and Ardea Garneri, Gmel. : Le Pouaire and Le Pouaire de Ceynnes, Buff.; Stred and Garfardton Heron, Lath.; and Scarsa cenerino, ‘Stor. degl. Ut.’ Indeed ornithologists have described it as a distinct species, in almost every progressive stage of plumage.

In the old state the bird is the Biboureu, Raupeau, and Hero gris of the French; Scarra Niticorna of the Italians; Der Nacht-Reiher and Aschagrau Reiger mit 3-fachen federn of the Germans; Blauwrede of the Netherlanders; Night-Heron and Lesser Ash coloured Heron of the British.

Habits, Food, Reproduction, &c.—The Common Night-Heron appears to affect high situations by day, and in the evening resorts to the low-lands, marsh, or river side for its food, which consists of fish, for choice, and in their absence of frogs, mice, and even insects. The old French quatrains says:

<table>
<thead>
<tr>
<th>Le Biboureu espace de Heron</th>
</tr>
</thead>
<tbody>
<tr>
<td>Es haults rochers et es collines hante.</td>
</tr>
<tr>
<td>Sa forme est pres au Heron differente.</td>
</tr>
<tr>
<td>Sur le rivage il vit et environ.</td>
</tr>
</tbody>
</table>

The general truth of this picture of its habits is borne out by modern observation; and its fondness for perching on high situations is attested by Mr. Gould, who received a fine adult specimen which had been shot from a high tree in the vicinity of a pond near Falmouth. The nest is built of sticks on the topmost branches of trees, and the bird breeds, as the Common Heron, in society. Where there are no reeds, the nest has been found among reeds. The eggs, four in number, are pale greenish-blue.

Geographical Distribution—very wide. Since the article Bittern was written, the Prince of Musignano has corrected the statement of its identity with the Qua Bird, which he notes as distinct, in his Geographical and Comparative List, under the name of Nycticorax Americanus, Bonap. Ardea Nyecriornis. In addition to the localities given in the article above quoted, Col. Sykes notices it among the collection of birds skins formed at the Cape of Good Hope by Captain Spiller, R.A. (Zoo. Proc., 1835.) It will be observed in the article Bittern, that Le Vaillant had previously noticed it in South Africa. Mr. Gould records it, among other localities, from North Africa. Dr. Von Seebold and M. Burger saw it in Japan. M. Lesson states that he found it at the Falkland Islands (Isles Malouines).

In Europe, M. Temminck notes it as rather abundant in most of the southern countries, but as more rare towards the north; and as not numerous in Holland. He considers the bird found in North America as the same species; but in this, it seems, he is mistaken.

In the small islands of the common Night-Heron is a rare visitor. In the editions of Pennant, the specimen in the Leverian Museum, which was shot near London, is noticed, and the editor had heard of another having been killed in Suffolk; and Dr. Latham, in a note to the same work, relates that one was killed at Cliefden in Buckinghamshire. He adds, that it is common in Spain and about Gibraltar, and that it inhabits China and India; and falls into the general error, as it now seems to be considered, that the North American species is identical with it.

Montagu, no longer, in a specimen shot on the Ouse near Aupthorpe, and another (a young bird—Gardeonian Heron) shot near Thame in Oxfordshire, by Lord Kirkwall. Be-
NYMPHICUS. [PUPTACIDE.] NYMPHODORUS, a surgeon, whose date is not exactly known, but who must have lived some time before Christ. He is mentioned by several ancient authors as the inventor of a machine for reducing luxations of the femur (Cels., De Med., lib. viii., cap. 20; Gal., Comment. in Hypsocr. de Artic. Libr., tom. xviii., pars i., p. 736, ed. Kühn), and also of a sort of box (γλυκερευτής) for fractures of the limbs (Orig., De Machinam., cap. 24). He is probably the same person as Nymphodorus mentioned by Aelian (Tetrab. vii., Serm. i., cap. 45, 49), Paulus Aegineta (lib. vii., cap. 12), and Galen (De Composit. Medicam. per Genera, lib. vi., cap. 14, tom. xiii., p. 926, ed. Kühn).

NYMPHS (Νυμφαί: Nymphae) were female deities in the Greek and Roman mythology, who were supposed to preside over all parts of the earth. Those who presided over rivers, brooks, and springs, were called Naiads; those over mountains, Oreads; those over woods and trees, Dryades and Hamadryades; those over the sea, Nereids; those over valleys, Nymphae, &c. They are represented as beautiful young women; and indeed their name, which is probably connected with the Latin nudo, appears to have signified originally marriageable young women. They were the attendants of Hera, Aphrodite, Artemis, and other of the goddesses; and the nurses of many of the gods, as Zeus, Dionysus, and Pan. Their lives were very long, but they were not immortal. (Paus., x. 31, sec. 2.) They were worshiped in many parts of Greece, and were propitiated by offerings of milk, oil, and honey, and by sacrifices of libations (Theoc., I., v. 55, 149); and temples were also dedicated to them in Italy. (Cic., De Nat. Deor., lib. 17.) [NAIADS; NEREIDS.]

NYSSONIDÆ, a family of Hymenopterous insects belonging to the section Fossores. This family is thus characterized by Latreille.—Labium either entirely or for the most part hidden; the maxilla and labium divided; mandibles without any internal notch; head moderately large; abdomen either conical or somewhat ovate, and with a short peduncle; antennæ filiform, with the first joint but slightly elongated.

The principal character which distinguishes this family from its congeners is the absence of a notch on the inner side of the mandibles. It contains the following genera:—Astita, Nysion, Oxybelus, Nitela, and Pison.

In the first of these genera, Astata of Latreille, the eyes are large and of an oval form, converging at the vertex, and in the male sex meeting; the mandibles are bifid at the apex: the anterior pair of wings have one narrow, short, and appended marginal cell, and three submarginal cells of which the first is narrow, longitudinal, divided obliquely near the middle by an obsolete nervure; the second marginal cell is triangular, and receives both the recurrent nervures; the third is very distant from the apex of the wing; the legs are moderately long and very spiny in the female.

Astita boops (Schrank) is about half an inch in length; the head, thorax, and legs are black, and the body is red, with a black tip and a small spot of black at the base. This species is found in various parts of England and the Continent, but appears to be local. The female builds her nest in the ground, and is said to select the burrow formed by some other insect for the purpose. Mr. Shuckard, in his excellent work on the British Fossorial Hymenoptera, states that the males are much more abundant than the females; and whenever he succeeded in capturing the latter with its prey, he always found it to consist of the larva of Pentatomia bidens. Mr. Curtis has captured specimens laden with the larva of Pentatomia praetiosa, and a little bee (Ephebe variegata) is preyed upon by the Astata to feed her larva.

In the genus Nysion (Latreille) the anterior wing has three submarginal cells; the second cell receives both recurrent nervures and is petiolated; the first submarginal cell is considerably longer than the two others; the mandibles are terminated by a simple point; the eyes are oval and prominent. Five species of this genus are recorded as British.

The genus Oxybelus (Latreille) is distinguished by the eye being oval and slightly prominent; the antennæ short and arcuated; the anterior pair of wings have a narrow marginal cell slightly appendedicular, and one submarginal cell, which receives a single recurrent nervure; abdomen short. The species of this genus are described in Mr. Shuckard's work: the most common is the Oxybelus nigricula, an insect about a quarter of an inch in length; black, with a row of white spots on each side of the abdomen, and with the tibias and tarsi red. It preys upon flies, which it carries by its hind legs to deposit in the burrow in which the young are reared.

The genus Nitela (Latreille) differs from the last in having the antennæ longer and nearly straight, and with the second and third joints of equal length. Like Oxybelus, it has but one submarginal cell; the mandibles are bifid at the apex; there are no protuberances on the thorax, nor spines on the legs.

In the genus Pison (Spinola) the eyes are emarginated; there are three submarginal cells to the anterior pair of wings: the second cell is very small, petiolated, and receives two recurrent nervures.
The use of Greek and Latin terms is not always straightforward, especially in scientific fields. Greek and Latin roots form a significant part of scientific vocabulary. For example, the term "DNA" comes from the Greek words "deoxyribonucleic acid," reflecting its structure. Similarly, "RNA" stands for "ribonucleic acid." These abbreviations are used extensively in biology and biochemistry.

The use of Latin and Greek in modern languages is evident in various contexts, from medicine and law to literature and art. For instance, "sala" (Italian for "hall") is derived from the Latin word "hallatus," meaning "amazed." Similarly, "chateau" (French for "castle") comes from the Latin word "castrum," meaning "fortified place."

The influence of Latin and Greek is also seen in the naming of scientific institutions and journals. For example, the "Nature" journal, one of the oldest and most respected scientific publications, is derived from the Latin word "natura," meaning "nature." The use of Latin and Greek in scientific nomenclature helps in maintaining a standardized and universally understood terminology.
OATES, TITUS, was the son of a ribbon-weaver, who, having ascended from the Anabaptists, among whom he was a preacher, conferred to the doctrines of the English established church, took orders, and held a benefice. He was educated at Merchant Taylor's school in London, and at the university of Cambridge. Having received ordination, he became chaplain to the duke of Norfolk, who also settled him in a small living. (Hume.) He was subsequently accused of perjury, but he escaped conviction, and became chaplain in one of the king's ships, from which he was disgracefully expelled. Shortly after he embraced Roman Catholic doctrines, entered the College at St. Omer, and though more than 30 years, was to be detected. On his return from a mission to Spain in 1677, the Jesuits, who, through Oliver, the general of their Order, had issued commissions appointing various persons whom they could trust to the chief offices of state, both civil and military, Lord Arundel, he said, was to be chancellor; Lord Petre, vice-chancellor; Lord Stafford, paymaster; Sir William Godolphin, privy seal; and Coleman, secretary of state. All the dignities too of the church, he alleged to be newly appropriated, and many of them to Spaniards and other foreigners. Two men named Grove and Fecocking, he denounced as the authors of the Popish plot. The king, and that Sir George Wakeman, the queen's physician, had engaged to poison him, the queen herself being privy to the scheme. He also stated that the Roman Catholics were to rise in different districts of the kingdom, to capture the Tower, and effect the excommunication of Protestantism.' His evidence was confirmed by two men named Tonge and Bedloe, especially the latter, a man of low extraction and bad reputation. (For Tonge see vol. ii. p. 450; for Bedloe, Lingard, vol. xii., p. 97, and Hume.) For the list of persons, both Jesuits and men of importance in this kingdom, who suffered imprisonment and execution through the accusations of Oates, we must refer to the general history.

Notwithstanding the almost universal credence which was given to him at the time, it has subsequently been placed beyond doubt that the plot which Oates pretended to reveal was an infamous and perjured fabrication. His evidence was conflicting and generally incredible. The manner of its production, not at one time but at several times, though he had previously professed to have told all that he knew, the mode in which the first disclosure was made, together with inconsistency and errors, evidently betray imposture. 'While in prison he was carried, he said, to Don John, who promised great assistance to the execution of the Roman Catholic designs. The king asked him what sort of a man Don John was? He answered, a tall, lean man; directly contrary to the truth, as the king was well aware of his situation. He had just taken his degree at the college at Paris. Though he pretended great intimacy with Coleman, he did not know him when placed very near him, and had no other excuse than that his sight was bad in candle-light.' He also fell into other errors. (Hume.) We mention these particular facts in order to show that little reliance can be placed on the evidence of a man who, if his word was to be believed, had entered the Jesuits' society with the sole purpose of gathering their secrets in order to betray them.

It may be urged, that the universal credit given to Oates's evidence at the time is a strong proof that his story was true. There are circumstances however which account for the ready belief with which his accusations were received, although they did not prove their truth.

The English Protestants had long apprehended an attempt on the part of the Roman Catholics to restore their religion and re-establish their power; and their anxiety on this account had latterly been augmented in some degree by the conduct of the king, and in a still greater degree by the Duke of York's open professions of the old religion and his attachment to its adherents. Moreover there were immediately connected with Oates's disclosure two events giving it an apparent corroborcation, which was eagerly assumed to be real by the feverish minds of contemporary partisans. The first of these was the sudden and unexplained death of Sir Edmundbury Godfrey, the magistrate who had taken Oates's depositions. No proofs could be adduced to show the manner of his death. Whether he committed suicide or was murdered has never been ascertained; but the circumstances of his deposition, and his suspecting the Protestant plot, combined with a prospect of gain, induced him to contrive the "Popish Plot" which alone has preserved his name from being forgotten.

In September, 1678, he made a disclosure before Sir Edmundbury Godfrey, a noted and active justice of the peace, and Evelyn's Memos (vol. ii. p. 459; for Bedloe, Lingard, vol. xii., p. 97, and Hume.) For the list of persons, both Jesuits and men of importance in this kingdom, who suffered imprisonment and execution through the accusations of Oates, we must refer to the general history.

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(Demosit, "A"ροβεὶν ὀφ. c. 16; Karé Κώκου, o. 10; and Moier and Schuberth, Att. Proc., p. 675.)

In the Roman jurisprudence, an oath was required in some cases from the plaintiff or the defendant, or both. Thus the oath of calumny was required from the plaintiff, which was a solemn declaration that he did not prosecute his suit for any fraudulent or malicious purpose. The oath of false swearing was perjurium, perjury; but it was considered a less offence in a party to a suit when the oath was imposed by a judex than when it was voluntary. It does not appear that in civil proceedings, on which occasions were necessary, sworn testimony appears to have been examined on oath in the judicia publica, which were criminal proceedings. The title in the Digest, 'De Testibus' (22, tit. 5), makes no mention of the oath, though it speaks of punishment being inflicted on witnesses who bore false testimony.

The law of England, as a general rule, requires all evidence or testimony for judicial purposes to be given on oath, and all persons may be sworn as witnesses who, being quiescent, can and will give the oath, or who have been considered as witnesses in criminal procedures. The title in the Digest, 'De Testibus' (22, tit. 5), makes no mention of the oath, though it speaks of punishment being inflicted on witnesses who bore false testimony.

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of him who administers it, or of that political superior who imposes it, is the opinion of the person who takes the oath; and if the individual who takes the oath believes that the Deity, in case it is profaned, will inflict a punishment which otherwise on him will be the object of those who enforce the oath is accomplished, and an additional sanction against mendacity is secured. It matters not whether the Deity will punish or not, nor whether he who enforces the oath believes that he will punish or not: if he who takes the oath believes that the Deity will punish false swearing, that is sufficient to show that the oath is of itself a sanction.

The fear of legal punishment is admitted by Bentham to be an additional sanction against mendacity. But the legal punishment may or may not follow detection, the perjury may be detected, and therefore not punished. Is the oath, or would a declaration without oath be, a mere form without any useful effect whatever, because the legal punishment may not and frequently does not overtake the offender? When a Greek or a Roman swore by his gods, in whose existence he believed, and who, being mere imaginations, could not punish him for his perjury, was not his belief in their existence a sufficient reason why the oath was not made for sanction? All antiquity at least thought so.

There are occasions on which oaths are treated lightly, on which he who imposes the oath, he who takes it, and they who have an influence on the subject of the oath are willing to make it a trivial matter. Such occasions as these furnish Bentham with arguments against the efficacy of oaths on all occasions. Suppose we admit, with Bentham, as we do merely for the sake of the argument, that 'on some occasions oaths have been and are used,' - but not as a question of this, notwithstanding the fact, which nobody can doubt, 'that among the English clergy believers are more abundant than unbelievers.' The kind of oaths which go for nothing are not made use of by Bentham, but they may be expounded in the same manner. Nor if all oaths are treated lightly by Bentham, or with any other body of men, the dispute would be settled. But this is not the fact. If in any way it has become the positive morality of any body of men that a certain kind of oath should be made, and that if a man do not make it, it is a disgrace to him, with respect to that kind of oath, has the opinion of his body. He does not believe that such oath, if broken, will bring on him divine punishment, and therefore such oath is an idle ceremony. But if there is any oath, the best and unrepresented of which he thinks will bring on him divine punishment, his opinion as to that kind of oath is not at all affected by his opinion as to the other kind of oath. Now, oaths taken on judicial occasions are by the mass of mankind considered to be oaths of the latter kind, and therefore most solemnly and with all due weight and ceremony they take them. Whether society will in time so far improve as to render it safe to dispense with this ceremony in judicial proceedings, cannot be affirmed or denied; but a legislator who knows what man now is, will require better reasons for the abolition of judicial oaths than Bentham has given.

How far the requisition of an oath may be injurious in excluding testimony in certain cases, and how far oaths on solemn and important occasions may be made most efficacious, and in what cases and in what manner substitute the declarations in lieu of oaths, are not matters of consideration here. It is enough here to show that an oath is a sanction or security to some extent, if the person who takes it fears divine punishment in case he should violate it; and that this, no other, is the ground on which oath is imposed.

Indeed it is evident that in English procedure the pressed opinion or belief of the person who takes the oath is the only reason for which courts of justice either admit or reject evidence, in which the trial is determined by the declarations of witnesses which may be put to a witness when he comes to elicit his evidence in a court of justice. There is some difficulty in stating accurately how far attestations were required from witnesses in Roman law, but it is clear that the violation of oaths in general the reader may consult Grotius, De Jure, B. & P., lib. ii., c. 13; Paley's Moral Philosophy, Tyler's Origin and History of Oaths; the Law Magazine, vol. xii.; and the work of Bentham already referred to. AATS (Avena) is a well-known species of the genus Avena, a plant of the family of the Gramineae, in the class Triandria Digynia of Linnaeus. [Avena] We shall here only consider those varieties which are cultivated for their grain, principally as food for horses, and in some cases fed also, when ploughed in and cultivated. The great use of oats, and the ease with which they are raised on almost every kind of soil, from the heaviest loam to the lightest sand, have made them occupy a place in almost every rotation of crops. Before agriculture has been subjected to regular rules, the result of long experience, the land was often sown as long as any return could be obtained, before any means of recruiting it with manure were thought of: and the last crop which would return any increase into the soil was generally oats. After this land, no longer repaying the labour of ploughing and sowing, was abandoned, till, by length of time and the decomposition of roots and weeds, some renewed fertility was produced. Of all the plants commonly cultivated in the field, wheat and barley may be considered the most productive of manure from the soil, and hence are justly considered as greatly exhausting the land. Some farmers on this account prefer buying all their oats in the market to raising them on their own land. Where the soil is well adapted to the growth of wheat and barley, which bear the heaviest rent, may be a judicious plan; but as a general rule, it is always more profitable to raise oats for home consumption than to trust to a fluctuating market. With proper management, a crop of oats may give as great a profit on the best land as on other crop, and it is considered a valuable solvent of manure and produces an abundance of straw, which is very fit for the winter food of horses and cattle, especially when aided by roots or other succulent food. To make a crop of oats profitable, some attention must be paid to the preparation of the land, and the crop is free from weeds; for when oats on a foul wheat or barley stubble slightly turned in by the plough, as is sometimes done, is the reverse of good husbandry.

The best oat is generally sown in Scotland and in Friesland, and in both countries the land is carefully cultivated. In Scotland, oats are generally sown on a grass layer which has been in that state for some years, and sometimes on old pastures which are broken up for the purpose. The crops are cut almost as soon as the heads are formed, and the person, unacquainted with the system, would expect, and in many seasons, not favourable for the wheat crop, oats are much more profitable. Wherever the land is not of a good quality, and wheat is apt to fail, oats are a much safer crop, especially in retarding autumn and spring frosts. When oats are sown after turnips, cabbages, or any other green crop, the land should be well ploughed, if the green crop was not consumed on the spot, and a moderate supply of manure will be well repaid by the increased produce. A heavy loam is best suited to oats; they require a certain degree of moisture, and a deep soil is very favourable to their growth. On land which has been trenched, or where the subsoil ploughed has been used, after careful draining, if required, oats will thrive wonderfully, without requiring so much a soil as barley or wheat, and will have a stronger vegetative power. When once they have struck deep into the soil, a good crop, according to the quality of the land, may be relied on.

When oats are sown after arable grasses, the land is seldom ploughed much deeper, and the seed is sown on the fresh mould which has been turned up; but unless the land be very free from weeds, it would be better to plough the sward with a shallow furrow early in autumn. Before the latter is done the plough would break the rotten sward, which is then be buried deep by another ploughing. The land would be ready for sowing early in spring, which is a great advantage, both as to the quality of the oat crop and the earlier harvest, especially in those districts where the latter part of the autumn is apt to be stormy and cold. The land thus treated would be clean, and the fallow, which is often re-
sorted to, of necessity, after a crop of oats, might be dispensed with, as the weeds have been destroyed and buried deep.

When oats are sown on light land after turnips, which have been eaten by sheep folded on them, it may be to their advantage to sow a few hills of turnips will turn in the surface: the preparation for turnips will have sufficiently moved the soil; and the manure of the sheep should not be buried too deep. On poor moist land oats are more profitable than barley. Carvans and gasse seeds may be sown among them with equal advantage, as they will seldom grow so high as to be laid and another the young clover; and barley is very apt to fail on land subject to retain the water.

In growing oats more seed is often used than of any other grain, because, although the plants tiller where they have room, the straw of the second shoots is weaker, and the grain is not ripe so soon as that of the principal stem; but when the plants rise close and thick, there are no tillers, the main stem and stinger; and six bushels of oats are often sown on an acre; but if they are drilled, four bushels are sufficient, and when dillibed, which is sometimes the case in Norfolk and Suffolk, much less seed is used. A good preparation of the land is of more consequence than a superabundance of seed.

In a field where oats are sown broadcast, and covered by the harrows, many seeds remain exposed to the depredation of birds, which soon find them out at a time of the year when they are scarce; but when the hills are dribbled, all the seed is buried and germinates, without any loss. When the seed is sown and ploughed in, the same object is attained; but as the furrow must be shallow in order that the seed may not be buried too deep, the land must have been sufficiently ploughed, and the seed sown where after turnips fed off by sheep, in which case ploughing the seed in is a good practice: in either case four bushels of seed per acre is an ample allowance.

When the ground has been well prepared, there is no necessity for fencing or hoing the crop as it advances; but if large weeds appear, such as charlock, May-wed, docks, or thistles, they must be carefully weed out, or else the ground will be so infested with their seeds or roots that it will be difficult to eradicate them afterwards. Oats are generally reaped with a scythe, and raked into heaps to dry like hay; but this is a wasteful and slovenly practice. A good crop of oats should be reaped, like wheat, close to the coat, and tied in sheaves. A cradle scythe or a short hand mowers scythe is best suited to the work. The expert mowers, who should be followed by binders, who gather the straw with their hands, and lay it regularly on the ground, if it be not fit to tie up immediately: the straw should afterwards be tied up into sheaves, and set with the corn uppermost in short, or else the sheaves, leaping against each other, and open at bottom, in order to allow the air to pass through. Thus, in a short time the oats become sufficiently dry to be stacked, or carried immediately into the barn. The produce of an acre of oats varies according to the soil and preparation, from four to eight and even ten quarters.

Oats grow into a coarse meal form a considerable portion of the food of labourers and many men in the middle ranks of life in Scotland, Ireland, and the north of England. A meal is simply stirred into boiling water with a little salt, until it becomes the consistency of a hasty-pudding; it is then called porridge or stir-about; and when eaten with milk or treacle makes a wholesome and palatable food. It is sometimes mixed with the thick liquor strained from the scald, or which cabbagehaods are boiled, and acquires the denomination of beef-brose or kale-brose. When made into a dough with water, and baked on an iron plate in thin cakes, it makes a bread, which is very palatable to those who are accustomed to it, and which is often offered to visitors, which on account of its universal consumption has in consequence been called the Land of Cakes. In Germany and Switzerland the coarsely bruised oat-meal is put into an oven till it becomes of a brown colour; it is then called haber-meal, and is used in broths and pottages, as the same lina, made from wheat, is used in France and Italy. The coarsely broken grains, after the husk has been removed, form grits, which are extensively used in France to make gruel for invalids, and in Ireland the coarse oat bran, which makes a bag forms a good substitute for feather-beds for the poor, and is far more wholesome than feathers, from the ease with which it may be renewed at little or no cost.

In some countries the oats are given to horses at the straw, without threshing them; and where the land is so regulated, the practice is good. The horses manure the corn better in the chaff, and the straw is wholesome, but where horses do hard work, they would be too long in making a sufficient quantity, and it is better to give them an threshed and cleaned, with which hay cut into chaff. When hay is dear, it is often cheaper to increase the quantity of oats, and to give it with wheat-straw cut fine. In the very little hay is required. The calculation is easily made when we consider that a pound of good oats gives as much nourishment to a horse as two pounds of the best clover, or saffinov hay. A truss of hay of 56 pounds is therefore equal to 28 pounds of oats; or a bushel of the best oats will go as far as one truss and a half of hay; and if the quantity is worth four shillings, which is at the rate of 14. to 18. one bushel of oats, or thirty-six twisses, the equivalent price of oats at 39c. per quarter.

Farmers who have hay-ricks from which they often allow their men to take as much as they please for their horses, will carefully measure out the oats, which probably are much cheaper in the upper story of the hay-ricks than in the lower. It is a sine qua non that all feed is made up by a machine, and mixing this with a proper proportion of oats, feed all their horses in mangers with certain allowance of the mixture, a practice much more economical than that usually adopted. In France and Germany the grain is left on the sofa, as well as hay, into barns for horse-food, is gaining ground, and is said to be attended by an evident saving of food.

OAXACA. [MEXICAN STATES.]

OABDI'AH (אָבָדִיָּה, Oabdāh) was one of the twelve minor Hebrew prophets. The name corresponds to the common Arabian name Abdullah, meaning servant of /God; it occurs several times in the Old Testament: Kings, xxviii. 3; 1 Chron., iii. 21; vii. 3; ix. 16; 2 Chron. xvii. 3; xxxiv. 12; but neither of men mentioned in these passages appears to have been the prophet, whose whose personal history we know nothing. His prophecy appears from internal evidence (verses 11-14, 20) to have been composed shortly after the destruction of Jerusalem in the year 587 B.C. He is described as a prophet of Jeremiah; and we find a striking resemblance between some passages in these two prophets (compare Obadiah 1: 4, 5, 6, 8, with Jer., xlix. 14, 16, 9, 10, 11). The question here arises, was Obadiah copied from the other? We have no evidence that Jeremiah quoted other prophets, and there is nothing strange to find in him a quotation from Obadiah and critics who have carefully examined the passages have thought that those in Jeremiah bear marks of being expected to a horse as a horse. The reason why the book of Obadiah has been placed to much less in the Pentateuch is that in the Hebrew Bible is thought to be, because its subject is so closely connected with the last verses of the prophecy of Amos, which immediately precedes it. The book is the prophecy of Obadiah, the shortest book in the Old Testament, consisting of only one chapter. The prophecy denounces the destruction of Edom, on account of their insolent triumph in the day of the captivity of their brother and in the destruction of Jerusalem (verses 1-9); and for the love of the Jews, the destruction of their enemies, and of Edom doing them the least, and the very up of the kingdom of the Lord (verses 17-20). The book of the Edomites at the fall of Jerusalem, which is referred to in the former part of this prophecy, is not the same book as this, which is called Obadiah, and is written by another prophet and by a writer in the Persians (Isaiah xxxii. 12; xxxxi. 7; Jerem., xlix. 7-22; Amos, i. 11; Psalms, xxxvii. 7). The latter part is supposed to have been accomplished in the return of the Jews from Babylon and the restoration of the Edomites, but the last word is to refer to the more remote period when all the world shall become the kingdom of God (compare Rev. xvi. 15). The style of Obadiah is clear and energetic: he forms a short poem.
OBELISK. (From the Greek 'obeliscus' (α'βελίσκος), the ditch and needle or spear-head, and 'oselos' (α'σέλος), which signifies a 'skeuira' or 'needle' (Hierol., ii. 41), but is also used by Herodotus (ii. 111) to signify an obelisk: the Italian name aguglia and the French aiguille (needle) are from the Latin aequus. An obelisk is a lofty monumental four-sided shaft di- mensioned in such a manner that the sides gently inclined, but are polygonal, and consequently the bases of their sides are much narrower in proportion to their entire diameter, so that the diminution is not so sudden as it would be in a four-sided mass of the same bulk and height. Secondly, a spire (colonne aigüelle) is an ornament, placed by itself or as other ornament at its summit, whereby sufficient im- portance is given to it; and thirdly, a spire neither is nor is intended to look like a solid mass of stone, but requires to have a certain expression of lightness, both in itself and as a part of the whole; so that what was sufficient height neither in bulk nor in mass, is reduced to appear not only a solid mass, but a single stone, standing upon a massive pedestal, and that pedestal resting on the ground. Hence it is obvious that the effect of these spires was to draw the eye away from the bottom, to change the eye from the base to the top, and, in a measure destroy all nobleness of appearance towards its summit, because it would be of inconsiderable bulk for a considerable length downwards. In this respect the obelisk is particularly beautiful, and the beauty of the pedestal only serves to perfect and complete the effect. As a monument an obelisk is greatly preferable to a column, inasmuch as it possesses all that recommends the latter without being open to the objection of being a mere imitation of what was designed for a totally different purpose, and consequently placed, as a separate figure, in a separate position. The greater diameter of the capital and abacus, which is both a beauty and propriety in a column supporting a superimposed mass, ceases to be so, or rather becomes quite the contrary, when the column supports nothing but one base, forming in that respect a platform on its summit, overhauling the structure itself at its angles, giving the whole a top-heavy appearance, which is still further increased by a railing upon it. The London Monument and the York Column at London are examples of such a position. To be properly an obelisk, it being built up of masonry, the Wellington Testimonial in Phoenix Park, Dublin, is a much nobler object than a column of the same dimensions would have been; and it is to be regretted that the obelisk, which was not chosen for the monument of Finlaiden granite (84 feet high) erected at St. Peters as the Alexander column. Where, instead of being one solid mass, a monument of the kind must be constructed of separate stones, there may so far be some propriety in the obelisk form; for it is not difficult to imagine so many a little piece of stone brought together, to form a monument of sufficient dimensions, very little short of those of the largest ancient obelisks, and exceeding the generality of them, it was unfortunate that the usual pillar-shape was preferred, surmounted by the usual square platform. Much learning and research have been expended by Zoega and others in endeavouring to ascertain the origin of obelisks, yet without throwing any very satisfactory light on that part of the question. Antiquaries have in fact endeavoured to find positive evidence where none was to be obtained; for the case itself is not, like that of a particular invention or discovery, referrible to some precise period or nation. On the contrary, from the very earliest ages it had been the practice to mark some particular spot, the scene of some important event, by what might serve as a durable monument of it; nor would any thing more naturally suggest itself for such purpose than fixing in an upright position a stone of unusual dimensions. The Bible makes mention of this practice; and it prevailed not only in the East, and in the early ages of the world, but has prevailed to this very day in a religious or in an early stage of civilization. Among the Egyptians therefore the practice was not otherwise very remarkable than on account of their continuation it, and bringing such simple principal monuments to great perfection, making them of considerable dimensions, working them in the most elaborate manner, and adorning them with hieroglyphics, though not instead invariably, for there are instances of Egyptian obelisks which are not so sculptured; among others that in front of St. Peter's at Rome, and the one before the church of Santa Maria Maggiore.

Small obelisks were sometimes of sandstone or granite, but the larger Egyptian obelisks are all of the red granite of Syene; and it is certainly astonishing how such enormous masses of stone could be transported over such a distance as was considered, from a time so early, and removed from their position. We may conjecture that the Egyptians detached the large masses of rock for their obelisks somewhat in the same way that was adopted by the natives of India on the occasion of the obelisk called the Great Obelisk at Sakkara, in 1802. In this instance a groove about two inches wide and deep was chiselled out by the workmen in the line where it was required to separate the stone; which being done, a furrow was kindled upon it from end to end, and kept up until the furrow was finished, when the furrow was burned off, and cold water poured into the groove, whereby a clear fracture in the stone was made without further labour. Indeed the mode in which the Egyptians worked their quarries is clear enough; the first day from an inspection of the excavations, see Gau's Notices of the antiquities of Egypt, Antiq., i., pl. 32. Among the Egyptians, when the block had been thus hewn out of the quarry, it was conveyed away by a raft on a canal brought up to the very shore of the river, either at the time of the inundation when the water would rise to a sufficient level, or by lowering the block down an inclined plane or platform to the raft; or by digging a canal from the river to the site of the block, and bringing a boat under the obelisk, in the manner described above. The greatest difficulty, however, was to place it in position, which was raised and removed; being a thing which was repeated until the platform became an inclined plane as steep as it could with safety be carried up. The shaft being got thus far out of its horizontal position towards a perpendicular one, they then applied a strong timber scaffold, nearly as high as the obelisk itself, and enclosing the other three sides of the pedestal, other ropes being also employed in a contrary direction in order to check its coming down on the pedestal with too sudden a shock.

By the Egyptians themselves obelisks were sometimes raised as inscribed monuments or single objects, to have been raised as inscribed monuments or single objects,
but as the accompaniments to temples and palaces, where they were placed in pairs, that is, one on each side of a large entrance, or propylon, and it may therefore be inferred that some particular signification was attached to them. They were also sometimes placed in the interior courts of temples. With respect to their proportions, the shafts of obelisks were usually about ten diameters in height, and one-fourth narrower at top than at their base. The pyramidion, or apex, was made much more pointed in some obelisks than in others. One circumstance is observed that few Egyptian obelisks are perfectly square, two of their sides being generally somewhat broader than the other two, which may be accounted for by what has just been said, namely, that they were placed against buildings, not intended to be the objects of sight from every direction. The face of an obelisk is sometimes slightly convex, instead of being quite plain; as is the case with one side of the Lateran obelisk.

The number of obelisks in Egypt must have been at one time very considerable, yet we are not therefore to suppose that the erection of them was a frequent circumstance, since, once formed, they were almost impervious, and would therefore greatly increase in the course of ages. Many that are still remaining are no longer standing; and in some places several have been found on the same spot, some still standing, others lying on the ground. When the Romans became masters of Egypt, they removed many of these monuments to their own capital, among others that of the Lateran, which is the largest now known, its shaft being 10 feet 6 inches high, though it has been reduced, a portion at the lower part having been cut off in consequence of being fractured, and two of its sides 9 feet 8 inches, the other two 9 feet. This obelisk was first conveyed from Heliopolis to Alexandria by Constantine, and by that emperor’s son Constans severally placed at the Capitoline and to Rome latterly to one of the Lateran, and was erected in the Circus Maximus. The shaft of the Lateran obelisk weighs about 445 tons in round numbers. Augustus also had previously brought two from Heliopolis. That which was placed severally in the Vatican Circus by Caligula now stands in the piazza of St. Peter’s, is next in size to that of the Lateran, though supposed to have been somewhat abridged of its original dimensions. The entire height, including the pedestal and the ornament at top, is about 132 feet the shaft 9 feet, and a foot 18 inches square at its base, and 5 feet 11 inches at the other end. In the At- Meidan at Constantinople there is an obelisk about 50 feet high, said to have been erected by the emperor Theodosius.

During the calamities that befell Rome under its barbarian invaders after the downfall of the empire, the obelisks were damaged and overthrown, but they have been gradually restored under various pontiffs. The following table contains a list of the Roman obelisks, with their dimensions and other particulars:

I.—Sixth V., 1586.
The Vatican, in front of St. Peter’s, where it was removed from the Vatican Circus. On the side facing the church, and on the opposite side, we see the dedication to Augustus and Tiberius.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without base</td>
<td>132</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>2</td>
</tr>
</tbody>
</table>

Without hieroglyphics, and still entire.

II.—Sixth V., 1587.
In front of the church of Santa Maria Maggiore, erected by Fontana.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>With base</td>
<td>132</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without base</td>
<td>130</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>2</td>
</tr>
</tbody>
</table>

Without hieroglyphics; broken in three or more places.

III.—Sixth V., 1588.
In front of the St. John Lateran church, erected by Fontana.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without base</td>
<td>105</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>5</td>
</tr>
</tbody>
</table>

Hieroglyphics; broken in three pieces.

IV.—Sixth V., 1589.
Flaminio del Popolo, erected by Fontana.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without base</td>
<td>116</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>5</td>
</tr>
</tbody>
</table>

Hieroglyphics; broken in three places.

V.—Innocent X., 1631.
In the Piazza Navona; sometimes called the Pamphilian obelisk.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without base, &amp;c</td>
<td>116</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>5</td>
</tr>
</tbody>
</table>

Hieroglyphics; fountain round the base.

VI.—Alexander VII., 1667.
Minerva della Minerva, erected by Bernini.

This obelisk, with singular bad taste, is placed on the back of a horrible elephant, the work of Bernini.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without base, &amp;c</td>
<td>143</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>5</td>
</tr>
</tbody>
</table>

Hieroglyphics.

VII.—Clement XI., 1711.
Maluheto della Rotunda, in front of the Pantheon of Agrippa.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
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</thead>
<tbody>
<tr>
<td>Without base, &amp;c</td>
<td>67</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>3</td>
</tr>
</tbody>
</table>

Hieroglyphics; probably the pendant of No. 6. Fountain round the base.

VIII.—Pius VI., 1786.
Quirinal di Monte Cavallo, erected by Antinori.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without base, &amp;c</td>
<td>116</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>6</td>
</tr>
</tbody>
</table>

No hieroglyphics; appears broken in two or three places.

IX.—Pius VI., 1789.
Sallustiano della Trinità di Monte, erected by Antinori.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without base, &amp;c</td>
<td>116</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>6</td>
</tr>
</tbody>
</table>

Hieroglyphics.

X.—Pius VI., 1792.
Campene di Monte Citorio, by Antinori.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without base, &amp;c</td>
<td>116</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>6</td>
</tr>
</tbody>
</table>

Hieroglyphics.

XL—Pius VII., 1822.
Aureliano della Passagiata, on the Monte Pincia.

<table>
<thead>
<tr>
<th>Whole height</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without base, &amp;c</td>
<td>109</td>
</tr>
<tr>
<td>Modern ornaments at top,</td>
<td>6</td>
</tr>
</tbody>
</table>

Hieroglyphics. This is called by Zogha the Barberian obelisk, of which he says, 'Ilie e Romaus obelusca adnne cognitum solus expectat sospitatorum.'

XII.—1817.
Large obelisk on the Colian Hill, in the gardens of the Villa Mattei; hardly worth mentioning. It is a small fragment of a real obelisk mounted on a piece of modern granite.

In the present century, the labour of bringing away such immense obelisks nearly equal to some of the largest removed by the Romans has been accomplished by the French. It is the smaller of the two which stood before the propylon of the temple at Luxor, and is about 76 feet high and 6 feet wide on the broader sides of its base. Permission for the removal of both the obelisks having been granted to the French government by the viceroy of Egypt, a vessel constructed for the purpose was sent out in March, 1831, under M. Lebas, an engineer, to whom the undertaking was confided, it being previously determined to bring away one. After three months’ labour with eight hundred men, an inclined plane was formed from the obelisk to the river, where the vessel lay; and having been first carefully encased by planks to secure it from injury, the moment was lowered by nearly the same process afterwards employed for raising it again on its pedestal at Paris, when it was safely arrived, up the Seine, December 23, 1832, and was deposited near the Pont de la Concorde. Nearly three years however elapsed before it was elevated in the centre of the Place de la Concorde, which delay was partly caused by the being necessary to construct a platform of rough masonry level with the top of the pedestal, and a kind of timber car or sledge, was dragged up by means of ropes and capstans. One edge of its base having been brought to the edge of the pedestal, it was perfectly secured by ropes and pulleys attached to the bundle of wood.
maestis, five on each side, and within about three hours the operations were completed, under the direction of Lebas, October 25, 1836.

Some few years ago the project was entertained of bringing over to this country and erecting in our own metropolis the monument called Cleopatra’s Needle, one of the two granite obelisks at Alexandria, which is still standing, the other being on the ground. Including the pedestal, the entire height of the monument recommended to the Society for the Diffusion of Useful Knowledge exceeds 63 feet, and is therefore smaller than the Luxor obelisk at Paris. The idea of removing it hither seems now however to be quite abandoned.

The largest Egyptian obelisk hitherto brought over to the continent was that which was removed from the island of Philæ by Belzoni, and which is now erected at Kingston Hall, Dorsetshire, the seat of W. J. Bankes, Esq. It is a monolith of red Egyptian granite, 23 feet 1 inch in length, and its larger end, or base, 5 feet 2 inches square, the other being 15 feet 2 inches square. Before the cathedral of Catania in Sicily is a small obelisk, said to be Egyptian, which is remarkable on account of its being not square but polygonal, and also for being placed on the back of an elephant raised on a lofty pedestal.

In the article ARMIL, a stone and obelisk obelisk which differs somewhat from the genuine obelisk in form; but it will serve, together with that given in the article ARLES, which stands on an appropriate pedestal, to give an idea of the general appearance of one of these monuments of antiquity.

For further particulars the reader may consult the great work of Zeige, Champollion, and the Egyptian Antiquities, in the Library of Entertaining Knowledge, vol. i.

OBERLIN, JEREMIAH JAMES, was born at Marbach, in the county of Durlach, of a Protestant family, and was educated at the Gymnasium of that town. He afterwards spent a few months at Montbéliard for the purpose of learning the French language, and returned to Strasburg in 1750, where he published several works on the subject of obelisk. He took his degree of Doctor of Philosophy in 1758, and afterwards paid considerable attention to the study of theology. In 1768 he was appointed a teacher in the gymnasium where he had been educated, and in 1763 was entrusted with the care of the library. In 1779 he was appointed Professor of Logic and Metaphysics, and in 1797 Director of the Gymnasium. During the Revolution his life was in considerable danger. He was imprisoned at the beginning of November, 1793, but obtained his liberty at the end of a few months. He resumed his lectures at Strasbourg, in which he continued till his death, which took place on the 10th of October, 1806.

Oberlin was an accurate and industrious scholar. He published good editions of several of the Latin classics, of which his name and his genius are considered the best valuable. He had also paid great attention to the study of the ancient French language, and travelled more than once through some of the provinces of France in order to become acquainted with the different patois spoken in the country. He had also several works on the subject of, of which the most important are, *Observations concernant le Patois et les Mœurs des Gens de la Campagne,* Strasb., 1791; and *Essai sur le Patois Lorrain des Environs du Comité du Baz',* 1790.

Oberlin was also the author of several other works, the principal of which are,—* Dissertation Philologique de Veritum Ritu confendi Mortuos,* 1757; *Ritum Romanorum Tabulae in usum Auditorum,* 1774, reprinted in 1784; *De Patois dictis in Germania,* 1765, 1770-1775; and *Dissertations sur les Minnesingers* (the Troubadours of Alsace), 1782-1789.

The life of Oberlin has been written by Schweighäuser in Latin, and by Winckler in the Magaz. Encyclopæd., 1807.

OBERLIN, JEAN FRÉDÉRIC, Protestant pastor in the Ban de la Roche, and younger brother of the philolo-
gerist Jeremiah James Oberlin, was born at Strasbourg on the 31st of August, 1740. His education was conducted with the greatest care by his intelligent and pious parents, and until he was 12 years of age he gave striking indications of the heroic qualities of his mind. The young Oberlin decided at an early age to devote himself to the study of the classics.

In 1757 he went to Paris, where he studied at the Collège Louis-le-Grand and the Collège de France under the famous C. A. Houdens, and at the same time became a pupil of the celebrated Louis Damourette, who afterwards became his friend.

Oberlin's studies at the Collège Louis-le-Grand were continued after his return to Strasbourg, where he also pursued his studies at the Collège de France and the Collège de France. He afterwards entered the University of Strasbourg, where he obtained his degree of Doctor of Laws in 1768. He also became a pupil of the celebrated J. J. Rousseau, whose influence was of great importance in the development of his mind.

In 1771 Oberlin was appointed a professor of philosophy at the University of Strasbourg, where he continued to teach for nearly forty years. He was also a member of the Academy of Sciences of Strasbourg, and was elected a fellow of the Royal Society of London in 1773.

Oberlin's works are characterized by a profound knowledge of the classics, and by a great respect for truth and justice. He was a man of great integrity, and was esteemed by all who knew him. He died at Strasbourg on the 10th of July, 1805, and was buried in the church of St. Peter, where a monument was erected in his memory.
The potatoes, which were the principal food of the people, had so degenerated, that some fields only yielded about one-third of the former crop. The people were blinded by the success, but Oberlin procured new seed; and as the soil of the mountains was well adapted to the culture of the potato, abundant crops, and of a very superior quality, were soon obtained. He also introduced the culture of flax and Dutch clover, taught the people the value of manure, persuaded them to convert a great quantity of pasturage into arable land, and established an agricultural society and a fund for the distribution of prizes to the farmers.

Oberlin was no less zealous in promoting education in his country than in his industry. He constructed the poor-school house at Waldbach in place of the log-hut built by Stouber, which had fallen to decay; and in a few years a new school house was built in each of the other four hamlets. To him also belongs the honour of being the founder of infant-schools, which he established in each of the hamlets, placing them under the management of conductresses paid at his own expense.

In these schools the children were not allowed to speak a word of patois. In the higher schools the subjects taught were reading, writing, arithmetic, geography, the principles of agriculture, astronomy, and sacred and profane history. Oberlin carefully superintended all the schools, and reserved the religious instruction almost entirely to himself. He made great efforts to supply the people with suitable books, which were printed at his own expense; among these was an almanac which he drew up for the use of his parishioners.

None of these schemes for the worldly advantage of his flock over diverted Oberlin from his peculiar duties as their spiritual leader. He constantly reminded them that they must do everything from a religious principle, and even the planting of trees and the repairing of a road were represented by him as works which were to be performed to the praise of God, who had furnished us to land, to each other's welfare, and from love to Christ, who spent his life in doing good. So far did he carry this mode of connecting faith and good works, that he required of all young persons applying for confirmation a certificate from their parents, that they were planting plants, cultivating the soil, and working in a simple, impressive, and affectionate, well adapted to the minds of his people, and perfectly orthodox. In the year 1782 he founded a Christian Society for the religious improvement of his flock; and dissolved it in 1783, on account of the opposition made to it by some among the patois. His preaching was simple, and his work was not to offend. His own conduct was always influenced by the most sincere piety, and by a strong practical faith in a superintending Providence. This faith procured for him a certificate which he used to keep in his pocket, with these words Out and None were with them, while he drew lots wherever he found himself unable to decide which of two courses to pursue, believing that 'the lot is cast into the lap, but the whole disposing thereof is of the Lord' (Prov. 16:3). At the dissolution, the Ban de la Roche was not only secured from molestation by the well-known character of the people and their pastor, but Oberlin was even able to afford an asylum to several proscribed persons. Once indeed he was cited before the supreme tribunal of Alsace on a political charge, when he was not only acquitted, but received an assurance from the court of their deep regret that he should have been called from the scene of his labours. In 1795 he renounced his stipend on account of the poverty of his people, leaving each of his charges to dispose of his own property; in 1797 he gave up his house to his people to prevent them losing by them: in the space of twenty-five years he succeeded in redeeming all that had been brought into the Ban de la Roche.

Among the employments which Oberlin found for his people he included, knitting, weaving, with the plows of the country, and weaving. About the year 1813 the industry of the district received a fortunate stimulus through the introduction of the ribbon manufactory by M. Legrand, formerly a director of the Helvetic Republic, who was induced by his esteem for Oberlin's character to remunerate with his two sons from Basle to the Ban de la Roche. In this family Oberlin found M. faithful friends and able assistants in his plans of usefulness. Among the old evils under which the Ban de la Roche had suffered, one of the greatest was the want of patents, out of which had arisen a ruinous law-suit between the peasantry and the seigneurs. Oberlin purchased the right to the extensive forests of the district. Oberlin persuaded the parties to come to an agreement, and the person with which that agreement was signed was solemnly presented to the maires of the district on the 6th of June, 1813. Oberlin succeeded for Louis XVIII. presented him with decorations of the Legion of Honour as an acknowledgment of the services which he had rendered to a numerous population; and in 1815 he received a gold medal from the Royal and Central Agricultural Society of Paris. His Memoirs contain an account written by several persons, of very different characters and pursuits, of visits to the Ban de la Roche during Oberlin's life, and all of them bear witness to the astonishing results of his labours, as shown by the intelligence and the respect for politeness and hospitality, the industry, benevolence, and happiness of the people whom he had found reformed, ignorant, and half-savage. Those readers who wish further information as to his character, habits, and personal appear-ance are referred to his Memoirs.

Oberlin died on the 1st of June, 1826, in the 84th year of his age and the 59th of his residence in the Ban de la Roche. He was buried at Fouday on the 5th of June. Nearly all his flock followed their Ober Pastor, as they always called him, in the funeral procession, and were received with all the Protestant clergy in the neighbourhood, joined in the funeral rites. An affectionate parting address was read to him, which he had left behind him, was read to the people at the institution on the occasion of his death.

Oberlin was married on the 6th July, 1768, to Madeleine Salomé Witter, who died on the 18th January, 1814. He had nine children, two of whom died very young. The other seven were brought up under his own care, and left him not unprovided. His wife lived with him after his death in 1793; Fidelité Caroline, who was married in 1795 to the Rev. James Wolff, of Mittelbergheim, and died in 1809; Charles Conrœve, who became in 1806 pastor at Rothau, in the Ban de la Roche, where he still resided in 1838; Louisa Charlotte, Henriette, who married the Rev. M. Graff; and Frederic Bienvenu, married to the Rev. M. Rauscher. Oberlin was succeeded by his son-in-law, M. Graff, who had been his assistant for some time: but he was soon obliged to remove to Strasbourg on account of ill health.

An account of Oberlin's life would be incomplete without a notice of Louisa Schepler, who was originally a servant and a conductress in one of his schools. Upon the death of Oberlin's wife she became his housekeeper, and, soon after she begged him to pay her no more wages, but to treat her as one of his children. Her request was complied with, and she lived in Oberlin's family till and after his death, employing all her energies and the whole of a little property which she possessed in works of benevolence.

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OBESITY is an excessive accumulation of fat in various parts of the body. It is not possible to define the boundary beyond which the fat in the body can be called excessive in proportion to the size of the person, as it varies in the most varied degrees equally good health, and the person may at different times possess more or less without any injury to his health. The average quantity of fat in healthy men is from 7 to 9 1/2 pounds, in a weight of the whole body, the fat is greatest in the fat part of the body, and it is only a small and, for the most part, the age of 40, at which time an increase in the quantity of fat is observed in the majority of persons.
The chief accumulations of fat take place beneath the muscles, in the omentum and mesentery, about the heart, on the chest, and under the chin. In all these parts a certain quantity of fat naturally exists, and here therefore its amount is merely increased; but in cases of excessive obesity, it accumulates in situations where before there was none, as among the minor torpor of the muscles even of the heart, and in various other tissues.

The common effects or accompaniments of excessive fatness are sleepiness and heaviness, indisposition or incapacity for active exertion, shortness of breath, a dullness in the heart, and a general torpor of the functions of the body. It predisposes to various congestive diseases, as apoplexy, &c.

The remedies for obesity are unfortunately not so well known or so effectual as are desired. The first is quietude, a bountiful supply of nutritious food, and long sleep are the means by which the graziest rarely fails to produce obesity in his cattle; and it is in general found that a plan exactly the reverse of this is the most successful means of relieving men from the same condition. Dr. Radcliffe's brief advice 'to keep the eyes open and the mouth shut' embodies nearly all the curative means for this disorder. A small quantity of food, and that of the least nutritive kind, active exercise both of body and mind, diminished quantity of sleep, and every thing to avoid needlessly to excite the appetite, with the moderate reliance on the various secrets in at least their natural quantity, are the only means that can be employed with the least prospect of benefit. It is true these are often insufficient, but they should still be persevered in to prevent the consequences of an evil which the opposite course will undoubtedly ensure.

OBI'DOS, a small town of Portuguese Estremadura, situated near a lagoon which communicates with the sea, about 40 miles north of Lisbon, stood on the west side of the ridge which crosses the country from north to south. This place has become memorable in the history of our own times through the battle which took place near it on the 17th August, 1608, between the English, commanded by Sir Arthur Chichester, who was advancing from Monte de Bay, where he had landed about a fortnight before, and the French, commanded by General Delabarde. The English attacked and drove the French from their position with the loss of six hundred men. The French general fell back upon Torres Vedras, where he was joined by Junot, who, soon after fought the battle of Vimeiro with a similar result. The battle of Oibidos was the first of a long series of engagements between the English and the French in the Spanish Peninsula, which continued till 1814.

OBJECT GLASS [TRIPOCOS].

OBLATE, a term applied to a spheroid which is made by the revolution of an ellipse about the smaller of the two axes.

OBLIQUE. This term is used as opposed to direct or right, and signifies what is not direct or right. The word seldom appears, except as expressing that an angle is not a right angle, all other uses of it being almost obsolete.

OBLINQUITY, a term used in astronomy to express the angle made by the ecliptic with the equator. The greatest latitude at which the sun ever appears vertical is the obliquity of the ecliptic. [Sun: Precession and Nutation.]

OBLONG, a word in common use, expressing the same meaning as, and in our opinion preferable to, the mathematical term rectangular, or having the figure of a rectangle.

OBOE (Ital.), a musical instrument of the pneumatic kind, blown through a reed: it is a tube of boxwood, 22 inches in length, stainer in the upper part, and conically constricted at both ends, and consists of three joints, or pieces, besides the reed. Its compass is two octaves and a fifth, from c below the treble clef, to g, the fourth added line above it:

Modern improvements have augmented the resources of the Oboe by means of eleven keys, but only skillful performers can safely be trusted to produce the two or three highest notes; and till very recently, *h* or even *c* above the staff, was considered the utmost practicable extent of the instrument. Oboes are now frequently made to go down to *b* and, in which case they exceed the usual length, and have an additional key.

The Oboe has for centuries past been in use, and may be traced back to the reign of Edward III, in whose band oblongs under the denomination of *Waghtes*, were employed. Indeed our itinerant parish-musicians, the official precursors of what was once a merry season, retain the appellation of *Waghte*, though they have long abandoned the instruments which earned them their title.

Up to nearly the close of the last century this instrument was only known, in most parts of Europe, by its French name, *Hautbois*; and this pronunciation has been retained, even now, in the French term, through the word Oboe is now invariably adopted in writing.

OBOULOS (οβολος), was a Greek coin, both silver and brass. At Athens it was of silver, the sixth part of a drachma, and worth somewhat more than five farthings sterling. The Attic obolus is stated to have been heavier than the Athenian. It is generally supposed that *obolos* and *oboles* (οβολος and οβολας) were originally the same word differently pronounced [Oriëns], and that the coin *obolus* was first of iron or copper, in form like a spit, which was afterwards changed to a ring (φαγήρ); and that the form was afterwards changed from an oblong to a round shape, but that through struck round, like other money, it continued to retain the antient name. It is to be observed that the obolus was originally so called from being stamped with the figure of a skewer or spit, or other sharp-pointed instrument.

At a later period the obolus was of brass. Eckhel (Doctrina Num. Vet., tom. i., p. 156) mentions a brass coin of Meta, which, on the reverse bears the word OBOAOX. This coin, which is in the Imperial cabinet at Vienna, is engraved by Motraye (Voyage, tom. ii., tab. 7, n. 40). Pittius notices a similar coin bearing the same word, struck by the Nicias. Wise, in the Numm. Brit., p. 365, has given this *Obolus* the same form as the obolus, *OBLIO, obola*.

The small silver coin of Athens, bearing on one side two bodies of an owl rising into one body, is supposed to be an obolus. There are small brass coins of Athens also of the same type.

The Greeks had a semi-obolion (ισχυροβολος), or semi-obolus, and a triobolus (τριοβολος) or three oboli, which was the common pay of the Dacitae; the pay originally having been two oboli. Two oboli were placed in the mouth of a dead person, in order to enable him to pay for his passage over Styx. According to Lucian, men's demands only, usually consisted of two obolus. (Aristoph., Progs., 141; Lucian, Catalep., i., p. 643.)

According to Suidas (οβολος), the Athenian obolus contained seven chalc (χαλκος), and the chalcus contained seven lepta (λεπτος). Other authorities say that the obolus contained eight chalea.

(Juli Pollicia Onomasticon; Pitsiex Lex. Antiq. Rom.; Rassche, Lexicon Rei Nummarii, tom. iii., p. 2, 32; Boeckh's Publicum Dubliniae, Athen., i. 132; ii. 386, Engl. tr.)

OBSERVANTS, Friars, a branch of the Franciscans. Some considerable relaxation having been gradually effected in the rule of the Franciscan order, it was thought requisite, as nearly as possible, to restore it to its first rule and original institution; whereupon such as continued under the relaxed laws were called *Friars Regular*; and such as accepted the reformation were called *Observants*, or Recollects. This reformation was begun about A.D. 1400, by St. Bernard, or Bernardin, of Siena, was confirmed by the Council of Constance, A.D. 1414, and afterwards by Eugenius IV. and other popes.

The Observants were brought into England by king Edward IV., who allowed them to fix their first residence at Greenwich. King Henry VII., by his charter bearing date 1466, after receiving that he was the successor, king Edward IV. had, by the popes licent, given to certain Minorites, or Observant Friars of the Order of St. Francis, a piece of ground adjoining to his palace there, on which some ancient buildings, and that these friars having taken possession, and having laid the first stone with great solemnity, began to build several small mansions in honour of the
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Virgin Mary, St. Francis, and all Saints granted and confirmed the said premises, and founded a convent of friars of the Order of Friars Minor, to continue in the possession of the said brethren at the least. (Curt., I Henry VII, n. 24.) It is said that he afterwards rebuilt their convent for them from the foundation. (Hist of the Eng. Franciscans, p. 216.)

Catherine of Aragon, the first wife of Henry VIII, was a great favourite of this convent and their order. She appointed one of the friars of Greenwich, father John Forrest, to be her confessor; and while she was resident at this place, she used to rise at midnight and join the friars in their devotions. The friars were wont to open and uncover the tabernacle when the subject of the divorce was agitated. The king was so much irritated by this conduct, that he suppressed the Order altogether.

The convent at Greenwich was suppressed August 11, 1539. On the accession of Queen Mary to the throne howevert, the Observant friars appeared again in public, and returning to Greenwich, began to form themselves into a community. The queen reinstated them in their possessions, founded their monastery anew, and repaired it at her own cost, out of gratitude for her fidelity to her monarch. Queen Elizabeth expelled the friars, and suppressed their monastery again, on June 12th, 1559.


OBSERVATION AND EXPERIMENT. The first of these terms includes a portion of the second, insomuch as every experiment is made with a view to observing the results thereby obtained, in place of the former, implying a disposition of means of observation which it is in the power of the experimenter to make for himself, and which he actually did make for himself. If, for example, a person who observed the attraction of the magnets for the first time, dubious of the residence of the attracting power, were to move the magnet to another place, that he might see whether the attracted body would still more towards it, he would make an experiment. But if his magnet were the same, but the body the other way, the proper times for observing the motion of the latter with respect to the former, in order to establish the attraction.

Thus astronomy, geology, meteorology, natural history, &c. are sciences of observation (that is, of nothing but observation); while mechanics, optics, electricity, &c. are sciences of experiment. In one sense geology and meteorology are partly sciences of experiment, since portions of the material subject-matters of these sciences may be submitted to preconcerted tests. It would however be more proper to consider the former sciences connected with these, than to class them as mixed sciences.

To give an account of experiment would require us to explain the methods of every science which proceeds by it; and it is evident that in order to do this, we should need the description of all the means or instruments by which our senses are assisted in the examination of phenomena. We shall here confine ourselves to a short sketch of the errors which render observations discordant, and which are the principal cause of the errors in every case in which we cannot command results which agree with each other so well that the difference between them is imperceptible to the senses.

The terms observation is of two kinds; in the first a simple individual fact is noted, in the second a magnitude is measured. The results of the first species are the proper subjects of inductive reasoning only; the results of the second, of inductive and mathematical reasoning, each branch of which is decided by the results of the other, are not necessarily subject to error: thus a zoologist observing the structure of a new animal might in every instance correctly note the resemblance which exist between it and other animals, and might in each case with certainty of succeeding observation would not induce naturalists to disturb. Collectively however, wrong inferences might be drawn from facts; thus results of classification which are true of all animals known up to this time, may be true, may be disturbed in the next moment by the discovery of a new specimen.

Observations of the mathematical character are of necessity erroneous from the imperfections of our senses. When a new insect is observed, it is soon seen, for instance, whether it has or has not wings, and the question once settled is finally decided. But when the insect is consisted of a substance, at a given pressure and temperature, is measured, it is impossible to consider the question as settled at any time. Say that, under given circumstances, the specific gravity is asserted to be 934 of that of air; and further, with a lens and an open eye, and although the dreams of having attained absolute truth. This being well known, and every process used in observation being subject to error, it is the business of the observer to repeat observations many times, and to extract a result as near to the truth as may be, from the mass of discordant materials which the repetition will furnish.

The necessary errors of observation arise from the imperfection of our perceptions and of the instruments which we use, and also from hasty or otherwise incorrect conclusions. The subject requires a separation of these errors into three classes, which may be mixed up with one another in results, and may be mistaken for one another. We may call them fixed, personal, and casual.

By a fixed error we mean one which is inherent in the instrument which the method employed must make, and all other things remaining the same, must have a given magnitude. Thus, if the axis of an equatorial (supposing such an instrument to be employed for absolute measurements) do not absolutely coincide with that of the heavens, the right inclination and deviation will be fixed, and measured when at a given distance from the meridian, will have a given error. It might be precisely the same in no mechanical effect, and would certainly produce an error of the same class, if the variable is the observer. But since we have not the means of observing the reduction of his observations. Thus, it would be perfectly possible to give to one observer an incorrect instrument and a correct formula, and to another a correct instrument and an incorrect formula, in such manner that their final results would coincide, it could be an experiment of exactly the same form, and with the same conditions, which would yield the same result.

Errors of this kind cannot be detected by multiplying similar observations, since there can be no tendency to destroy error in the mere repetition of it. There are many modes of detecting fixed errors, and of allowing for them; but the only mode of avoiding them is by the construction of the instrument to use it for the same purpose under different circumstances, in such manner that the measurements which are too large in one set of results must be as much too small in the other. If the same number of observations are made under different circumstances, we shall presently see, is really a reduction of the fixed error to the class of casual ones, or rather, a destruction of the fixed error by the same process which gives the highest probability of destroying the casual errors.

All instruments must contain some errors in every particular. In the science of observation, as now understood, and in any matter in which the utmost attainable exactness is requisite, the assumption of perfection in an instrument, in any point whatsoever, is looked upon as nothing but the expression of the observer's unwillingness to take trouble. For even if ninety-nine successful daily trials have shown that any particular error does not exist to any sensible amount, it is not conclusive against the existence of the hundredth. The hundredth error is the new circumstance, necessary or accidental, in which the instrument has been placed in the intermediate time.

By a personal error is meant one of the same character as a fixed error, but arising from the temperament or habits of the observer. All of observation is decided by the time at which the observer, should, in noting the time of a phenomenon by the clock, have a tendency to accelerate the moment of its happening, and a similar tendency to retard it, the results of the one should, by the sum of their personal errors, be only lately that it has become discernible, that individuals observing the same phenomenon with the same species of instruments, may differ sensibly (though but little) from each other; and this not once or twice, but nearly always. It is, in short, that to be observed that the set of observations of one observer differ from that of the other.

For anything we can know to the contrary, this species of error may exist in every observer; and its absolute quantity must be unknown until we can compare the observa-
tions of men subject to it with those of some other beings who are not. If indeed the personal error is purely casual, that where one person measures too much, another measures as much too little, the average of the results of a large number of observers would give the truth or very near it. But should it be the case, which is not impossible, that all men are subject to an error of the same kind, some more and some less, namely, that all measure more or less too much, or else that all measure more or less too little, the average above mentioned would give, not the truth, but the truth affected by the average error of all the observers. Whether error was or was not of this kind, we need not attempt to distinguish whether personal errors have a fixed average or not; for suppose the fact observed to be that A, one time with another, measures more than B; this may mean either several things:—either A measures truly, and B too little; or B at least, is supposed to arise from the use of a measure too little, and A too much; or both measure too little, but B more than A; or both measure too much, but A more than B. Now, if A and B were to observe together for a century, the mere compounds are to be removed, though it would settle the average amount of difference, would never enable us to give the least guess which of the preceding cases is the true one. If indeed we could convert the observer, as we have previously mentioned (but, generally, any observer with an error of the opposite kind, a true result, or one sensibly true, might be obtained. Suppose, for example, it is the observer's habit, in noting the transit of a star over a fixed wire in the field of a telescope, to take the true transit for that observed at the time, and too late on the left: consequently, by making a number of observations with an inverting telescope, and an equal number with one which does not invert, the average of both sets would be as likely to give a true result as any other.

All the errors which precede, though called errors because they give a result which is not the one intended to be obtained, yet are in fact the consequences of an actually existing state of things, and their laws can be determined by using the right general laws. But there remain errors from natural causes determinable by experiment in the same manner as other consequences of existing relations. They are then real measures of phenomena, called errors simply because the effects of their causes are to be removed from the results. It is even possible that they might be made intentionally in a given form, with a view to prevent their occurrence in a more objectionable form. Thus, suppose an observer finds himself, in correcting discordant observations, apt to add to the numbers which he obtains, and to subtract from them; he will set his instrument intentionally wrong to an amount which casual discorances never reach, taking care, of course, to preserve means of correcting the intentional error with the rest; so that the requisite corrections are added to the numbers, and subtracted from them. Nevertheless this arrangement, as it should be called, would go by the name of an error, simply as being to have its effect afterwards destroyed.

By casual errors, the only ones to which the name of error can properly be given, are those which are absolutely inexplicable, or of which the cause and tendency are equally unknown. They must be considered as equally likely to be positive or negative; so that in the long run the results which they give too great will be compensated by those which are too small, and if it be supposed that there is a greater tendency to too much than to too little, there must be a reason for this phenomenon, and a law of action, which must be sought for and detected. Let us suppose this done, so that any result of a single observation, corrected by the law determined, shows the errors of error, is in itself as likely to be too small as too great.

If all the observations be equally good, the MEAN, or average, is more likely to be true than anything else. This is even true with reference to fixed or personal errors, which may remain unbeknown; for there is even chance of such errors acting in either way. In the article just cited is shown the way of finding, from the observations themselves, the probable error, as it is called, or that which there is an even chance of being the true error, having reference to further sources of information. This article [MEAN], together with the general considerations in Probability, Theory of, and Wight of Observations, will contain all we shall find it necessary to say on the subject.

It might be supposed that the greater the number of observations, the less, in the same proportion, the probable error of the average; but this is not true, since the probable error diminishes as the square root of the number of observations increases. Thus, suppose it to be well settled that twenty observations of a given observer will have an average of which it is an even chance that it does not err by (say) a unit: then the same observer must make four times as many observations to get an average with an even chance of not more than half a unit of error; nine times for one-third of a unit, and so on.

Those who neglect sound principles of observation are apt to overrate the effect of multiplying observations; which, though considerable, does not, as we see in the above rule, keep pace with the number of observations.

OBSERVATORY. [TRANSIT INSTRUMENT.]

OBSDIAN (called by the Romans, Obsidiansus Lapis; by the Greeks, Οβσίδιαν ὁ λίθος), a mineral, probably of volcanic origin, and so called, as stated by Pliny (Hist. Nat., xxxvi. 26) from a person named Osidius, who first found it in Ethiopia. This substance occurs in beds, in large and rolled masses and in small grains. Its structure is compact. Fracture large, conchoïdal. Hardness 6½ to 7½. Scratches glass. Brittle. Colour greenish, greyish, or brownish black. Lustre vitreous. Opague. translucent on the side. Specific gravity 250 to 270.

Obsidian in the form of little grains of the size of peas, and of a pearly white colour, and consisting of very thin concentric layers, has been found at Marekan in the Gulf of Kamtschatka. It has been called Marekanite.

Pliny says that some of the small black and white stones were made of obsidian: he also speaks of four elephants of obsidian which were dedicated by Augustus in the temple of Concord. Statues were also made of it by the Egyptians who had existed.

Before the blow-pipe, it swells up strongly, and fuses into a transparent glass. It occurs in veins and beds traversing rocks in many parts of Europe, Asia, and America, and in the neighbourhood of most volcanoes.

The analyses of different varieties of obsidian differ considerably: the following analyses of Marekanite and of Obsidian from Cerro de las Navagas, are by Kliproth and Vau Quelin respectively:

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OBTUSE, opposed to acute, is applied to an angle which is greater than one right angle and less than two.

OBY, River. [SIBERIA.]

OCAÑA, a town of Spain, in the province of New Castile, not far from Aranjuez, and about 30 miles south of Madrid, situated on the high road to Andalusia. On the 19th November, 1819, the Spanish army of Andalusia, about 50,000 strong, commanded by General Arizaga, advanced to Ocaña, and threatened Madrid, which was occupied by the French. The French under Marshal Soult attacked the Spaniards, who fought with great courage, especially the Artillery, and at first appeared as if they would be victorious, but after three hours' fighting, the French succeeded in breaking through the Spanish line, which dispersed in the greatest confusion leaving their cannon, baggage, and one half of their men killed or prisoners. Arizaga hurried away with the remainder of his army, and on the 20th August the battle of Ocaña was a most disastrous event to the Spanish cause. The advance of the Spaniards upon Madrid had been effected against the advice of Lord Wellington, who was exiled, none of the French captured.

OCAÑA. [GRANADA, NEW.]

OCCAM, or OCKHAM, WILLIAM, an English scholastic philosopher, was born in the county of Surrey about the end of the thirteenth century. He was a pupil of Duns Scotus, 'the most博学的人', and a professor, and also master, of the order of Franciscans. He himself attained to the title of the 'Invisible Doctor.' He opposed the Realism of Scotus and his followers, and formed a new speculative sect, bearing the name of Occimans, who revived
the tenets of Nominalism. In the early part of the fourteenth century, he taught at Paris. He was distinguished by his powerful opposition to the papal power. A book which he published, entitled 'De Potestate Ecclesiastica et Seculari,' drew down upon him the censure of the pope. He was protected by the king of France, whose cause he had supported against papal encroachments. When afterwards excommunicated by the pope, he had an asylum and another from the emperor of Germany. He died at Munich, in 1347.

Very little is known of Oecam's life. A list of his works, which includes a commentary upon the Predicables of Porphyry and the Categories of Aristotle, and many treatises of cosmology, theology, and ecclesiastical law, will be found in Fabricius's 'Bibliotheca Ombrie,' and in the Catalogue of the Bibliotheca Americana, vol. iii., p. 466. Oecam's 'Summa totius Logicae' was published at Paris in 1458, and at Oxford in 1675, 8vo.

Tennemann gives the following account of the Nominalistic speculations of Oecam:—'He maintained that general ideas had no objective reality out of the mind, because neither the possibility of judgments nor the possibility of a real science requires this hypothesis, and it only leads to absurd consequences. These general ideas have no objective existence but as individual ones; they are a product of abstraction, and are either images (ignmenta) which the mind creates for itself, or subjective qualities belonging to the mind, and which, according to their nature, are the signs of exterior things. WEBER's doctrine, roughly sketched only, the problem of the principle of individualization cannot lose all interest, and the question of consciousness to occupy men exclusively. In the theory of consciousness, Oecam diverged still more from the Realist opinion, in that he minimized the autonomy of thought he has perhaps given more encouragement than he meant to give to scepticism and empiricism.' (Tennemann, Manuel de l'Historie de la Philosophie; Cousin.)

A few pertinent remarks on Oecam and his philosophy are contained in Mr. Hallam's 'Introduction to the Literature of Europe,' vol. i., p. 233.

Occultation. This word, which might serve to designate any eclipse of one heavenly body by another, and even the effect of cloud or fog, is particularly applied to the eclipse phenomenon by the moon, which has been seen, at (p. 373) that the spiral course of the moon's real orbit must bring her at some time or other in the course of a revolution of the nodes (186 years) at or near to every star situated within about 5° of the ecliptic either way. There are consequently continual occultations of stars by the moon, of such as can be made useful in finding the longitude are given yearly in the Nautical Almanac.

If the moon were (like the star) so distant that two spectators at nearly opposite points of the earth would not be sensibly removed from each other in time of the distance from each other was compared with their common distance from the moon, then all observers, wherever situated, would see the moon begin to hide a star at the same instant. They would all then be able to note by their differences the absolute instant of the disappearance of the moon; and [Longitude] their differences of clock-time at this absolute instant would give their differences of longitude. But the proximity of the moon makes it possible that one observer (at A) may see no occultation at the time when such a phenomenon has occurred to another (at B); and makes it certain that two observers cannot see the beginning of an occultation at the same instant of absolute time. Both therefore must deduce from their own observed times of commencement, and from their knowledge of the moon's place and motion the times, at their several places, at which a spectator situated at the earth's centre would see the star touch the moon's limb; and this being done, they are in the same position as if the moon had been too distant to require such a process. If the works of Kepler, and still more of the recent astronomical calculations, we should not have separated that required in reducing an occultation to the earth's centre from the similar case which occurs in an eclipse of the sun

or a transit of Venus: the principles employed in all are identical, though the first process is rendered more simple by the fact that the occultations of the star, which may be considered as marking the same point of the heavens at all places. For the value of observed occultations in finding the Longitudes, see vol. iv. p. 143.

Here we might close this article, if it were not for a singular circumstance which sometimes occurs: and which cannot be traced either to the character of the telescope employed, or of the observer, of the weather during the observation, or of the particular star under occultation. When the moon has been close to, or in the midst of, an eclipse, followed by disappearance of the star, the latter for a few seconds is frequently thrown upon the moon, as if it were the nearer body, and were going to cross the moon's surface, as Venus does that of the sun during a transit. While this could not be the case if the moon has fairly left the moon's limb or border, the star preserves it light, though it frequently undergoes a change of colour. Aldebaran, whose natural colour is inclining to red, has been seen to present this phenomenon much more frequently than any other star: but θ Tauri, θ and ζ Plautium, Spica Virginis, Regulus, γ Librae, η Tauri, η Cancri, 49 Librae, θ Aquarii, 249 Aquarii, 187 Sagittarii, η Leonis, η Geminorum, η Cancri, ζ Persei, η Tauri, have been seen more or less to come upon the moon's limb. See a detailed list of quotations from the different observers in a paper by Mr. South. On the Occultation of θ Persei the Moon: in the third volume of the Memoirs of the Astronomical Society. It is to be noted that many of these appearances did not exhibit the whole of the phenomenon, but made the star hang for some seconds upon the moon's limb, instead of immediately disappearing.

The moon has been observed again in the years 1829 and 1830, the Society just mentioned invited the particular attention of astronomers to them. The consequence was, a large number of communications from different parts of Europe, which are printed in the fourth volume of their Memoirs. Nothing can be more different than the results: some, who had not seen the phenomenon before, saw it for the first time; others, who had seen it before, did not see it; some, who had never seen it before, saw it; others, who had never seen it, could not do so. Of six observers at the Royal Observatory, one saw the occultation of the moon on the moon's limb, and one saw it hang on the edge of the moon for five or six seconds before it disappeared. Of three at the Observatory of Paris, two distinctly saw the event, and one saw the star disappear instantaneously, leaving a shade ('once for all') upon the moon; a phenomenon; and the moon disappeared. The majority saw the star either projected or hanging on the moon's edge. It is to be noted that the 'phenomenon has been seen, though rarely, at the dark edge of the moon as well as at the enlightened. Its cause is a matter of much diversity of opinion. Some suppose that the moon has an atmosphere close to the surface, which reflects the sun's light and appears opaque like the body of the moon, but is sufficiently transparent to allow the star to shine through it. Others think that the phenomenon is due to the spurious disks to the moon, which inferior instruments certainly do: others again refer it to the eye of the speculator, and think that the impression produced by the star on the retina lasts a short time after the actual disappearance; some other observates states that he has witnessed this phenomenon, according as his attention was directed exclusively to the moon or the star. All these explanations have their difficulties, and are not given very positively. No one of them except that which refers the phenomenon to the eye of the observer will explain why it should sometimes happen, and sometimes not, with the same observer and the same instrument; and it is obvious that by supposing a peculiarity of each individual retina for the time being, we do not make this phenomenon any more than make a purely arbitrary supposition, and one which would serve to explain the star to come between the moon and ourselves.'
OCCUPANCY. This term in English law signifies the taking possession by any person of any thing which has no owner (Bracton, fol. 8, b), and the general doctrine, as stated in Bracton, is derived from the Jus Gentium of the Roman lawyers, as explained in the Digest (lib. 41, tit. 1, s. 1, 3, &c.). That use of the term which will be here explained has been much varied, and loses all its original meaning in some cases; but in others it is precisely the same as in Bracton.

An estate pur ater vie, or for the life of another person or persons, had formerly some peculiar qualities incident to it. If a man had an estate in land for his own life, such estate was always considered as being possessed of the land in fee simple; and if the devisee or beneficiary died, the estate was determined, and the legal possession of the land reverted to the owner. If, however, the devisee were seized of the estate in fee simple, he could hold it in his own right, and his heirs, if he should die intestate, would be possessed of it in the same manner as if the devisee had lived to the time of his death. This doctrine seems to have been first established by Sir William Sandys, and the principle of it is contained in the Statute of Wills, passed in the reign of Henry VIII. But the Statutes of Wills were limited to estates in fee simple, and no power to devise estates pur ater vie existed at law before it was given by the Statute of Frauds.

Since the passing of the Statute of Frauds (29 Car. II., c. 3), no estate shall be so devised as is here mentioned (unless it be as above mentioned) to cease by the death of the testator. That statute has been much commented on, and the object of it was to prevent the payment of devisees, if there were no special devisee thereof, of which no devise should have been made according to the said act (29 Car. II., c. 3), or so much thereof as should not have been devised, should go, and be applied, and distributed, in the manner as if there had been a devise to such devisee. These two statutes provided for the case both of a devise being made of an estate pur ater vie, and also for the case of the land coming to the heir as special occupant who was the heir; but where a devise of an estate pur ater vie may be limited either to a man and his heirs, or to a man, his executors and administrators, or to a man simply without mentioning either heirs, executors, or administrators. The Statute of Frauds appears to contemplate the heir only as special occupant, and if there was no devise according to the statute, and no special occupant, which would happen when the estate was limited simply to the grantee, the estate went to the executor or administrator for the payment of debts, and after payment of debts, the surplus was distributed, under the act of George II., in the same manner as the testator had directed the distribution of his personal estate, or it went, in the case of an intestacy, to the next of kin of the intestate. But when no devise was made according to the statute, and the estate was limited to the grantee, his executors and administrators, the interest could not in that case be special occupant, the question arose, if the executor or administrator could be such occupant, and if he could, the further question arose, Who was to have the surplus? The answer in this case is, the same. These two statutes seemed to be that the heir only could be special occupant, and that he alone could take as such. If then the land were not devised according to the Statute of Frauds, and there was no special occupant, by reason of the limitation to the heir, his executors, or administrators, the interest would be sufficient to pass personal estate, or, in case of intestacy, in trust for the next of kin. (See the opinions of Lord Redesdale, in Campbell v. Sands, 1 Sch. and Lef., 288; and the opinion of Lord Eldon, in Popple v. W., 7 Ves., 425.)

If a man dies intestate who is seised or possessed of an estate for another's life, and the limitation is such that the estate cannot go to his heir as special occupant, the estate seems open to a general occupancy until an administrator is appointed; but such administrator seems to have a title by relation.

Neither the Statute of Frauds nor that of George II. applied to copyholds, and therefore not to estates pur ater vie in copyhold lands.

Estates pur ater vie, whether there shall or shall not be any special occupant thereof, and whether the same shall be freehold, customary freehold, tenant right, customary or copyhold, or of any other tenure, and whether the same shall be a corporeal or incorporeal hereditament, are now devisable by a will in writing executed in the manner prescribed by the statute of 1 Vic. c. 26, which repeals, among other clauses, that part of the Statute of Frauds which relates to estates pur ater vie, and also the 9th section of the 2 Geo. II., c. 20. And disposition by will is most of any estate pur ater vie of a freehold nature, the same shall be chargeable in the hands of the heir, if it shall come to him by reason of special occupancy, as assets by descent, as in the case of freehold land in fee simple; and in case of incorporeal or corporeal estate pur ater vie, it shall go to the executor or administrator; and if the same shall come to the executor or administrator either by reason of a special occupancy or by virtue of that act, it shall be assets in his hands, and shall go and be applied and distributed in the same manner as if it had been a special occupant or intestate. This statute settles a number of questions, some of which have been already referred to, which were of frequent occurrence, with respect to estates pur ater vie.

On the subject of Occupancy, the reader may consult Puffendorf, Law of Nature and Nations, iv., c. 6.

OCEAN (a Greek word, Oceanus, Græco) is a term used to indicate the extensive bodies of salt-water which cover the greater part of the earth's surface. The word first occurs in Homer, who uses it to designate the river or
stream which, according to his ideas, surrounded the surface of the earth like a circle. The Greek geographers however knew that the ocean was a wide expanse of water, which surrounded the land, and the term ocean was used by them in this sense. They supposed that it penetrated deep into the mass of the continent by four great bays or seas: these were, on the south the Arabian Sea and the Persian Gulf; on the west the Mediterranean; and on the north an imaginary strait which connected the Northern Ocean with the Atlantic. In the 15th century Ocelus estimated the land only at 35,840,000 square miles; if this be correct, the land does not amount to one-fourth of the entire superficies of the earth. Some German geographers however are of opinion that the land-area is fully equal to one-fourth of the whole sphere, and perhaps a little more.

Several parts of the ocean are distinguished by peculiar names. The widest expanse of salt-water is that which extends between America on the east, and Asia and Australia on the west, and is called the Pacific Ocean. Its breadth is considered to be as wide as the distance between the two opposite poles of the earth. The boundary-line of this ocean is in Asia, Cape of Good Hope, by the Atlantic, and from South-West Cape, the most southern extremity of Africa, to the Antarctic Pole. The extreme of water contained within these boundaries is computed at 100,000,000 square miles, or nearly half the superficies of the earth.

The ocean which extends between Europe and Africa on the west, and America on the east, may also be considered as being closed on the north by a strait, but it is one of consideration; the boundary-line is formed by the northern coast of Norway and the eastern coast of Greenland, which two countries are nearly 900 miles apart, between 66° and 71° N. lat. Towards the south the Atlantic extends to the Antarctic Pole, where it is bounded from Africa by an imaginary line drawn from Cape Horn, the most southern point of America, and from South-West Cape, the most southern extremity of Tasmania, to the Antarctic Pole. The extreme of water contained within these boundaries is computed at nearly 36,000,000 square miles.

That portion of the ocean which is separated on the east from the Pacific by a line drawn from Cape L'Aigle to the coast of the Island of China, and on the west from the Atlantic by a line drawn from Cape L'Aigle to the east coast of New Holland, is called the Indian Ocean. Its surface, including the Red Sea, Persian Gulf, Bay of Bengal, &c., is supposed to occupy more than 25,000,000 square miles.

The northern coasts of Europe, Asia, and America do not form a complete boundary, but are continued by an imaginary line from Cape Fries to Cape Horn, and 80° N. lat. Between these coasts is a sea, which may be up to 2000 miles across from one continent to the other. This sea is called the Arctic Ocean, or Icy Sea. The latter term has been applied to it from the circumstance of its being frozen during the winter with heavy masses of ice round. This sea is connected with the Pacific by Behring's Strait, and with the Atlantic by the wide strait between Greenland and Norway. Its area is estimated at about 4,000,000 square miles.

OCEANUS, De Montfort's name for the umbilicated form of Nautilus. [NAUTILUS, p. 113.]

OCELLARIA. [POLYPRIA MEMBRANACEA.]

OCELLUS LUCANUS, Ocellus 5 Arctæns, a Pythagorean philosopher, who was a native of Lucania in Italy, and is supposed to have been a disciple of Pythagoras; but the time in which he lived is uncertain.

He wrote many works on philosophical subjects, the titles of which are given in a letter written by Archytas to Plato, which has been preserved by Diogenes Laertius (viii. 90), but the only work of his which has come down to us is On the Nature of the Universe, Περὶ τῆς κοσμικῆς φύσεως. This work, as we learn from the extracts in Stobæus, was originally written in Doric Greek, and appears to have been translated into the Ionic tongue by the common translators of philosophical topics to maintain the eternity of the universal (ῥατία); Ocelus also attempts to prove the eternity of the human race (c. 3, s. 3.).

The best editions of Ocellus are by Batteux, Paris, 1745; and the late London ed., 1838, with a preface by H. J. Morland, accompanied with a valuable commentary. The work has been translated into French by the Marquis D'Argens, Berlin, 1762, and by the abbé Batteux, Paris, 1763; and into German by Bardilh, and by J. G. Schultes, Zürich, 1791.

OCEANUS, A Trilobite. [TIGRES.]

OCEANUS, Polypterus, from the Greek, okeanos, the ocean, or a river, and polypterus, multi-fronted, from the Greek poly-, many, and pteron, a wing. Thus it seems to denote a river with many branches. (Polypterus, p. 331.]

OCEANUS, The Ocean, or the Great Sea. [NAUTILUS, p. 113.]

OCEANUS, Ocellus 5 Arctæns, a Pythagorean philosopher, who was a native of Lucania in Italy, and is supposed to have been a disciple of Pythagoras; but the
feet. The western part of the valley, between this ridge and that along the Frith of Tay is narrow, but towards the east it widens; between Crig and Kilmany it is four miles wide.

The mountains just described constitute what are generally called the Ochill Hills. But to the south of them there are several groups and ridges traverse the counties of Fife, Kinross, and Perth, and are in this respect considered as the dependencies of the Ochills, though they are separated from them by depressions of considerable width. Such a depression occurs to the north of Loch Leven, between the Ochill and Lochmond Hills. The high grounds called the Braes of Ochill, of oak, ash, birch, and mountain maple, rise gradually from Milnathort to about 450 feet above the sea, and 120 feet above Loch Leven, and descend northward to Strathmiglo. This depression is about 4 or 5 miles wide.

On the eastern side of it, West Lomond Hill, or Bishop's Hill, rises precipitously to an elevation of 1721 feet above the sea. A ridge not exceeding 1000 feet in height unites with East Lomond Hill, which attains the elevation of 1466 feet. Both Lomonds are about 5 miles apart. High grounds extend northwards from the southern declivity of West Lomond Hill to the very base of the ridge Leven near its afflux from Loch Leven. A high tract runs eastward from the eastern base of East Lomond Hill, and in some places rises into hills, the most elevated of which are Down Hill, Clackmananter, and the hill near the Frith of Forth, from which it is only two miles distant. From Larg Law a ridge of high ground runs north, terminating east of Kembach, about one mile from the banks of the Eden, and two miles from the shores of the sea, and ancl. From it another ridge runs north-east, 3 miles from the sea. The general elevation of these ridges may be about 300 feet, and some hills are higher. The country enclosed by those ranges may be from 20 to 80 feet above the sea, a height which it maintains to the shores, except on some bays, which are enclosed by sandy and level plains.

South of Loch Leven, and only half a mile from its shores, is the Benarty Hill, which rises very gradually from the east and terminates abruptly on the west. Its elevation probably extends as far as by Benmore, where the Benmore shrines and terraces, which are gentle, approach the river Leven near its afflux from the lake, and two moderately elevated ridges of high ground run eastward between the Leven and Orr rivers, and enclose the valley of the Lochty, terminating near its confluent with the Forth. Two elevated hills occur on these ridges. From the western extremity of the Benarty Hill an elevated tract stretches southward to the western extremity of the Cleish Hills, but probably is not much above 50 feet above the sea. Cleish Hill, which extend nearly 6 miles east and west, form the boundary-line between Kinross and Fife. They rise to a considerable elevation; the highest summit, Mount Dunlop, is 1321 feet above the sea-level, and three others, called the Cleish hills, as well above, are 1480, 1512, and 1490 feet above the sea. The Benarty Hills are west of the Cleish Hills, and separated from them by a narrow but rather deep depression. They cover a large surface, being 4 miles long from north to south, and more than two from east to west. They also rise to a considerable elevation, but we are not aware that their height has ever been determined. They may be considered as the nucleus from which the high grounds branch off that traverse Fife, south of the Orr river, and Clackmananter, south of the Devon.

The elevated ground between the Orr and the Forth, is terminated by the earl of Strathmore and Fife, which extends to the course of the river, east and east-north-east, and terminates between Dysart and Wemyss, about a mile from the sea. Except a few hills near Beath, called Beath Hills, it is only to a moderate elevation, but a high tract of considerable breadth, occurring along the course of the River Forth, between Aberdour and Kinghorn, in several hills of considerable elevation, as Dunearn Hill (693 feet), Orrock Hill, and the Bin (625 feet); the last-mentioned elevation stands north of Burntisland, and has the character of a terminating ridge high land, which extends through Cleckmananter, is rather elevated near the Saline Hills, but gradually decreases as it advances farther west. It terminates in the vicinity of Tillyhob, where the Devon river turns to the south. The Ochill Hills consist chiefly of porphyry and amygdaloïd, but the hills which enclose them on the south belong to the coal formation, and are principally composed of lime-
Ockley had great attention to the study of the Oriental languages, and was well acquainted with the Arabic. His principal work, 'The History of the Saracens,' which was originally published in two volumes Ivo., the first in 1708, and the second in 1718, was compiled from Arabic manuscripts in the Bodleian Library at Oxford. This work, which commences with the death of Mohammed, and terminates in the year 705, contains much valuable information respecting the early conquests of the Arabs, and may still be consulted with advantage by those who are unacquainted with the 'Oriental languages.' In this connexion, Ockley made considerable use of his 'In Theod. and Fall,' and speaks of the author in his autobiography as 'an original in every sense, who had opened his eyes.' This work however does not appear to have brought Ockley much profit; for he complains, in his inaugural oration, in 1711, of his strained circumstances, and states the second volume of his history from Cambridge Castle, where he was imprisoned for debt.

Ockley wrote several other works, of which the principal are:—Introductio ad Linguis Orientales, in qua ipsa discursiva munitor, et earum Usus ostenditur, 1706; 'The History of the present Jews throughout the World,' 1707, translated from the Italian of Leo of Modena, a Venetian Rabbi; 'The Improvement of Human Reason exhibited in the Life of Hai Ebn Yokhdan,' 1708, translated from the Arabic; 'An Account of South-west Barbary,' 1713; a new translation of the second 'Apocryphal Book of Esdras,' from the Arabic version of it, 1716.

OCOCOH HILLS. [MISSISSIPPI RIVER.]

O'CREA (a boot) is a genus of large carnivorous otter, a curious and decorative botany by which certain species of fish grow together by their back and front edges in such a way as to form a tube, through which the stem passes. The genera Polygonum, Rheum, and Rumex offer a common illustration of this structure.

OCTAG. [POLYGONS.]

OCTAGON. [SOLIDS, REGULAR.]

OCTAVE (Octavus, Lat.), in Music, the eighth note of the scale, the most perfect of concords, whose ratio is 2:1, therefore the simplest of all the sounds, except the union. The harmonics of the octave and union agree invariably, a coincidence which occurs in no other interval, and these sounds have so close a resemblance, that in combination they are hardly distinguishable, the one from the other. The following are the properties, says Rousseau, which so singularly distinguish the octave from all other intervals:

- The octave embraces all the primitive sounds, that is to say, all the original tones and their descriptives, and having established a system or series of notes within the limits of an octave, if it be wished to extend this series it will be absolutely necessary to follow the same order in a second octave, in third, or a fourth, &c., and no sound will be found in any of the others, which is not also in the first. 

OCTAVIA. [ANTONIUS, M.]

OCTHO'SIA. [Crisipeda, vol. vii., p. 299.]

OCTOBER, in the year of Romulus, was strictly what his name implies, the eighth month.

With us it is the 5th day. Antonius Muson, who was born in this month, gave it his own name (Sueton., Domit., c. 11), but it lasted during his life only (Plutarch, Num., p. 72; Macrobius Saturnal., i. 12). Antonius Pius, in honour of his wife Faustina, called it 'Laus Faustina,' and the flatterers of Commodus assigned to it one of their patron's epithets, 'Invictus.' (Blilius Lampard., ed. Lugd., Bat., 1671, p. 507.) Our Anglo-Saxon ancestors called it se tewthmonth, the tenth month; they also gave it the name Winter-solstice, winter-beginning. (Bowen, Saz. Dict., v. *Month."

OCTOCERA, M. de Blainville's name for the first family of his order Cryptodibranchiata, containing the genus Octopus.

O'CULUS, Mr. Gray's name for a genus of Cephalopods, remarkable for the fragrance of their leaves, which are used as an ingredient in savoury dishes, on which account some of the species have from time immemorial been objects of very general cultivation. In English gardens they are called Basket, a collection of Basilica, the same we infer from common basil by the monkish writers upon plants, in allusion to its regal qualities.

OCTOPOUS. [CEPHALOPODA; SEPIA.DAE.]

O'CULUS, (M.) Madrephorica.

OCTOPOUS, a tribe of Branchiopoda, remarkable for the fragrance of their leaves, which are used as an ingredient in savoury dishes, on which account some of the species have from time immemorial been objects of very general cultivation. In English gardens they are called Basket, a collection of Basilica, the same we infer from common basil by the monkish writers upon plants, in allusion to its regal qualities.

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Character of the Tribe.—Carapace rhomboidal or trapezoidal, very much elevated anteriorly and depressed posteriorly; the narial border occupying the whole summit of the head, and the front, which is lamellar and bent down to the epistome, extremely narrow; its width does not equal a third of the length of the eyes, nor the half of the width of the buccal frame, which itself is very narrow. The antennae are very large and the cornua, in general, is very large, and placed vertically in the anterior angle of the orbit; the moveable stem of these appendages is extremely small and hidden under the front; the two terminal appendages are very short, in the form of a club, but armed with a sharp margin, a disposition which is not observed in any of the crustaceans previously treated of in the system of M. Milne Edwards, except in the Doto. The external antennae are rudimentary, and situated, as they only reach, the anterior angle of the orbit; the first joint is less than the second, and the third only reaches to the edge of the anterior border of the basal joint of the external antennae.

The epistome is continuous with the lower border of the orbit, and the buccal frame is very large anteriorly than it is posteriorly. The external post-fontina of the mouth completely; the interior border of their lamellate portion is straight; their third joint is very much elongated, and their fourth inserted at the external angle of the preceding. The internal palatium has a trapezoidal form, the
base of which is directed backwards; it is strongly curved in its longitudinal direction, and gives passage to the male organs at a considerable distance from its external border. The anterior feet are, generally, compressed and of very unequal size; the rest are very long and exhibit no great difference between themselves; the terminating joint is often depressed, but has never the form of a natatory oar. The abdomen, composed ordinarily of seven distinct segments in both sexes, is very narrow. In general it does not cover more than a third of the posterior portion of the sternum of the male, and even in the female leaves that part of the plastron which approaches the base of the feet exposed. In the greater part of the cases, if not always, there are only seven branchiae on each side of the thorax, five of which only are couched under the vault of the sides, and two reduced to the state of vestigies only, and fixed to the jaw-feet. (M. Edwards.)

Locality and Habits of the Tribe.—The Ocypodians, as their name implies, are very swift runners, living nearly always on the strand, where they dig holes for themselves. M. Milne Edwards, who remarks that this small and very natural group is closely allied to the genera Doto and Mysteria among the Pinnotherians, thus divides the tribe:—

**Tribe of Ocypodians.**

**Cornea transparent, very large, oval, occupying at least the half of the length of the ocular peduncle,** and commencing very near the base of those stems

**Ocypoda. (Fabricius.)**

**Genetic Character.—**Carapace rhomboidal or even nearly square, and nearly as large behind as before; its upper surface, which is nearly transversely horizontal, but a little curved in a longitudinal direction, is strongly inclined downwards and backwards; its anterior and lateral surfaces are very much elevated and nearly vertical, and these last are divided into two portions by an elevated vertical line which terminates between the base of the third and fourth pair of feet. The front is much longer than it is wide; it does not cover the articulation of the ocular peduncle, and only equals in width the half of the epistome, to the anterior border of which it unites itself. The orbits are very large, not deep, and divided into two distinct portions, one internal or foraminial, which gives insertion to the ocular peduncle, and which in the Cycdometopae and Oxyrhynchus is always hidden under the front; the external portion serves for the lodgment of the major part of the eye and its peduncle. The upper border of these cavities, which is much less advanced than the lower, presents a disposition which accords with this division, for it describes two curved lines which unite in forming an angle, the summit of which is directed forwards. The form of the eyes is also very remarkable; the cornea is oval, very large, and extends below within a very small distance of the base of the peduncle; but in general this last is prolonged beyond its extremity, so that the eyes terminate with a kind of horn, the length of which seems to increase with age. The internal antennae are disposed in the manner stated in Decapodous; the external antennae are rudimentary; their third joint is not half so long as the second, and their terminal stemlet is scarcely longer than their peduncle. The epistome is very small and presents at its median part a small quadrilateral prolongation, which is the third joint of the external jaw-foot is quadrilateral and much smaller than the preceding; it never hides the sort of appendage formed by the three succeeding joints, and the palp which occupies the external border of these members is styliform and deprived of a multi-articular exoskeletal flaneme. The anterior feet are, in general, shorter than the rest, and the hand which terminates them is much compressed and very large in comparison with the arm: the difference between the hands of each side is often very great, especially in the male. The succeeding feet are also much compressed, and increase in length up to the fourth pair inclusively; these last are about thrice the length of the post-frontal portion of the carapace and the posterior feet are much shorter; the tarsi are always compressed and nearly of the form of a small spatula, and at the basilar joint of the third and fourth pair there is a sort of articular surface surrounded with hairs, which seems destined to diminish the friction of these two members against each other. The abdomen is much as stated at its base than the posterior part of the thorax, and, in both sexes, leaves a considerable portion of the last segments of this part of the body exposed; in the male, it has a triangular, elongated form, and advances to the anterior extremity of the plastron; in the female its longest segment is not a fourth as long as the preceding, and is ordinarily received in a notch of its anterior border. The first pair of abdominal appendages, in the male, are very much developed, cylindrical and slightly hooked towards the end; the second pair are, in general, rudimentary.

The branchia which ordinarily exist on the antepenultimate joint of the sides is wanting in the Ocypoda; the others are directed very obliquely backwards, and the branchial cavity is elevated so as to leave above a great void space which is lined by a membrane more or less spongy. (M. Edwards.)

Habits of the Genus.—So rapid are the Ocypoda in their motions, that those who have observed these animals in their native haunts declare that they run so fast that a man can hardly overtake them. They hollow out holes for themselves in the sand of the sea-bank, and remain shut up in their burrows throughout the winter.

Geographical Distribution.—The warm climates of both hemispheres.

M. Milne Edwards records seven recent species, which he separates into two divisions, observing, at the same time, that the species are difficult to distinguish on account of the changes which age produces on the form of these crustaceans.

**A.**

Species whose transparent cornea occupies the extremity of the ocular peduncle, and is not overpassed by a styliform prolongation or a terminal tubercle.

**Example.** Ocypoda arenaria, The Sand-Crab of Catesby.
Length about two inches; colour yellowish.

Locality.—The coasts of North America and the Antilles.

Habits.—This species lives in holes three or four feet deep, which it hollows out in the sand immediately above the level of the wash of the sea. Its general time of quitting the burrow to seek its food is the night, and when pursued it runs with great swiftness, elevating at the same time its claws in a menacing manner. This is their summer life; but towards the end of October they retire inland to hibernate in the earth. When they have found a place proper for their purpose, they dig a hole like that which they had occupied on the edge of the sea; and, after entering therein, stop up the entrance so clearly that no trace of its existence is left. Then they retire to the bottom, and there remain till the warm weather brings them forth, when they again repair to their marine residences.

B.

Species whose eyes carry at their extremity an appendage, in the form of a tube, cylinder, or style, which overpasses the transparent cornea.

Example, Ocypoda hippæa. Terminal appendage of the eye large, short, conical, and furnished at its extremity with a pencil of long hairs. Length, two inches, French.

Locality.—Syria, Egypt, Cape de Verd, &c.

Gelasisimus.

Genus Character.—Carapax much wider than that of Ocypoda, more convex, and much narrower backwards. Stomachal region very small, and genital region generally very large. Disposition of the front and of the internal antennæ nearly the same as in the preceding genus; ocular peduncles, on the contrary, very narrow, and the cornea which terminates them not occupying more than its fifth part; upper border of the orbits much less projecting than the lower; not divided into two portions as in the Ocypode, and convex nearly throughout its length; external extremity of those cavities largely open, and communicating with a furrow which is obliquely directed behind and downwards. External Antennæ much more developed than in the preceding genus. The external jaw-feet have the same form as the Ocypode. The anterior feet, in general, very small in the female; but, in the male, one of them acquires enormous dimensions. Sometimes it is the right, sometimes the left claw which grows to this great size, being, in certain instances, twice as large as the body. The claws of the smaller anterior foot are enlarged and lamellated towards the end and a little contorted; those of the great anterior foot are arched, elevated, and slightly dentated on the edges. The rest of the feet are moderate, and present nothing remarkable. The same remark applies to the abdomens.

M. Milne Edwards, who gives the above character, states that Mr. Thomas Bell had informed him that some Gelasisimus have at a certain age, if not always, a stylet at the extremity of the ocular peduncle, on the side of the great claw, whilst the eye of the opposite side always retains the ordinary form.

Geographical Distribution of the Genus.—The warm countries in both hemispheres.

Habits of the Genus.—The Gelasisimus live in holes near the edge of the sea, in pairs, and the great claw of the male is used to stop the entrance of the hole.

The species are numerous; but they, as well as the Ocypode, are difficult to be distinguished, because the part which differs the most, namely the front and the great claw, change their form with the progressive age of the animal.

Example, Gelasisimus Marisians. Length about 8 lines with about an inch, French.

Locality.—Manila.
Kherson, is situated in 48° 37' N. lat. and 31° 30' E. long., on a small brook near the mouth of the river Dniester, which is here about four miles and a half wide between Oczakow and Kinbourn. Oczakow, though never a large place, was formerly one of the most important fortresses in this part of the country, and had a citadel, the walls of which were twenty feet thick. The population was at that time 5000. It is chiefly remarkable for the importance that was attached to it in the wars between the Turks and the Russians in the last century. In 1737 it was taken by storm by the Russians under Count Munich, but with the loss of 70,000 men; and in 1779, 70,000 men attempted to recover it, but was repulsed with the loss of 20,000 men. The Russians, having razed the fortifications, abandoned the place in 1738. The Turks re-occupied it in 1743, and held it till 1758, when, after a six months' siege by the Russians under Suvoroff, it was taken by storm. The English government interfered in 1790, to oblige Russia to restore it to Turkey; but the Porte ceded the place, which was quite devastated, at the peace of 1791. Oczakow never recovered, and has not at present above 1000 inhabitants, consisting of Greeks, Armenians, Turks, Russians, and Moldavians. This however may be ascribed to a great extent to the rise of Odessa, which attracted both its trade and its population. The town is still of some importance as a station of an asylum for Jews. The people of Kherson are obliged by the shallowness of the sea to stop at Oczakow, where the goods are put on board smaller vessels. Not far from Oczakow, at the village of Tarutino, at the mouth of the Bug, are the ruins of the ancient Milanian colony of Mesod, which, however, was not a Jewish colony, as has been supposed by some. The best odes and ancient coins, are frequently found.

ODE is derived from a Greek word, which signifies a song (οδός), and appears to have been originally applied to any kind of poetry which was written to be sung or spoken, and accompanied with music. The principal foundation of lyric poetry, and differs from epic poetry in delineating the poet's own thoughts and feelings, while the latter species of poetry details external circumstances and events. The most celebrated Greek and Roman odes are the Orphic and the_epistle. The best odes have perhaps been written by Dryden and Gray. For a further account of this species of poetry the reader is referred to Lyric Poetry.

ODETUS, or ODENATHUS. [Zenobia.]

ODENSEE. [Füen.] Odense.

ODENWALD. [Germany.]

ODER, RIVER. [Germany.

ODERIT is probably black mica; for, like that substance, it is a member of the talc-schist group, and has very little lustre. Its colour is probably owing to some foreign substance, which may cause the difference between its appearance and that of common mica. It occurs in Sweden.

ODESSA, a seaport and important commercial town of Southern Russia, in the government of Kherson, is in 46° 28' N. lat. and in 36° 42' E. long., at the northwestern extremity of the bay of Adachai. This town, which is now so flourishing, and constantly increasing in extent and importance, was a miserable village called Kodschabeg when the empress Catherine obtained possession of Oczakow and the part of the country as far as the Dniester, by the treaty of peace of 1717. Ever since the time of Peter I. the Russians have been very desirous of an establishment on the Black Sea, especially after they had lost possession of the south-east part of Poland. Catherine chose this spot for the site of the new town and seaport, and several regiments were employed in 1794 in digging the first streets and canals in the construction of a public buildings. The site is on a most salubrious spot. There is no river, but it has a fine bay, with sufficient depth of water, almost to the very shore, for the largest men-of-war. The bottom is fine sand or gravel, and the bay is seldom frozen, and then only for a few days.

The emperor Alexander completed what Catherine had begun. He appointed the Duke of Richelieu, a French emigrant nobleman, who had entered the Russian service, to the post of governor of the new town, under whose judicious administration its prosperity rapidly increased. The first inhabitants of Odessa were some Greek families, but in 1804 the population already amounted to 15,000. The town is regularly built in the form of an oblong parallelogram, on a declivity sloping towards the sea. The surrounding country is an extensive and fertile plain, but the climate is unhealthy at some seasons of the year. The town is formed by two large moles, and can contain two hundred ships, is defended by strong works. At the extreme end of the town are the other three, a projecting point of land on the south side of the bay there is a fine public promenade. The town is built on the site of an ancient town, the church of which is the Russian cathedral, the Protestant church, the Hanoverian, the Greek church, and the town there is a line of barracks, consisting of sixteen detached edifices; there are in the town nearly six hundred corn-magazines, and a bazar, which contains 550 shops.

To the north of the town there are magazines of salt and salt meat, and to the west of them reservoirs of water. The rivers which flow into the sea on both sides being at a considerable distance, Odessa used often to suffer from want of water, but this disadvantage has been remedied by the construction of a very extensive system of channels.

The education is the Lyceum, founded by the Duke of Richelieu, on the plan of those in France, and called by his name; two schools for jurisprudence, political economy and commerce, and a school for training schoolmasters, all connected with the Lyceum, and built by the government. There is a school for young ladies, a school of trade and navigation, a model-school for young Jews, the academy of the Oriental languages, the museum of the antiquities of Southern Russia, and the botanic garden and the Agricultural Society. Three public hospitals have been established, of late years, chiefly for the Poles, many of whom come to Odessa for the benefit of sea-bathing. The total population of Odessa, with its suburbs of Periasp and Moldawanks, was 52,000 at the end of 1837, among whom there are many Jews, Greeks, and Armenians. At Odessa and the surrounding districts there are various manufactures, the chief of which are the manufacture of paper, printing and publishing, which is carried on in a very extensive manner; there is a very fine printing-press; dyeing, hat-making, and the manufacture of shoes, are carried on on a large scale; the most celebrated manufacture is that of tobacco, which is carried on in very extensive works, and in which are employed many Jewish workmen, who are employed by the English, the French, the Dutch, and the English.

The labouring class consists chiefly of Little Russians, who speak a Russian dialect, and are for the most part runaway serfs. The adjacent country is inhabited by settlers from different parts of Germany, by Bulgarians, Greeks, Polaks, and Russian peasants. Of the Russian inhabitants of the adjacent country, the men are a robust well-built race; the women, on the contrary, are very ugly, dirty, and lazy. The Jews are in general very dirty in their dress; many of them, however, are very neat; one of the most common surnames of the Jews is Drops, and that of the Armenians is AebttwtrtiiMBlfeBflffeb, which means drops of wine or water. There are many Jews who are employed in the manufacture of shoes, the Jews are very plentiful in Odessa, and are generally employed in the manufacture of shoes, the Jews are very plentiful in Odessa, and are generally employed in the manufacture of shoes, as they are in all the ports of the Black Sea. There are also a numerous fraternity of Armenians, many of whom are employed in the manufacture of silk, and in other manufactures.

The year 1838 was declared a free port for thirty years, into which all foreign goods are admitted free of duty. The space allotted to the free port is enclosed with a circular wall to prevent smuggling into the interior. The most important article of exportation is corn from the Ukraine. Wheat is exported to Turkey, Italy, France, Spain, and England. The principal towns with which Odessa is directly connected are Trieste, Leghorn, Marseille, Barcelona, and London. Other articles brought from the Ukraine are hemp, madder, masts, and timber. The imports are colonial produce, and manufactures of all kinds. The richest merchants are English, French, and Italians; many Jews and Armenians are also engaged in trade.

Odessa has considerable breweries and distilleries, and manufactories of woollens and silks, tobacco, soap, and candles. There is a great want of mechanics in the town, and of agricultural laborers in the country. The Russian government has granted great advantages to settlers of both classes.

Within the last few years many gardens have been formed in the environs.

The commerce of Odessa in 1838 was remarkably prosperous: the value of the exports exceeded 38 millions of rubles, and that of the imports was nearly 22 millions of rubles. Above 800 foreign ships (of which 160 were English) entered the port, and nearly 800 sailed laden with the productions of Southern Russia, amongst which was above a million chevets of wheat. Of vessels employed in the

* A chevert is 390 lbs. English.
coast-trade, 650 arrived and 792 sailed. The customs' duties were 1, for the Richelieu Levant, 3,274,866 rubles (there is a small duty on every chest of corn; 2; for the town of Odessa, 1,630,612; 3, for the light-houses, 19,975: in all, 4,923,273 rubles. The year 1839 will probably show a further increase in the trade of Odessa; for the value of the exports in the first six months of the year was 23,109,990 rubles, whereas it was only 18,655,324 in the first six months of 1838. Up to August the imports were 12,662,162 rubles; 492 ships had arrived, and 473 sailed.  

(Hassel; Stein; Cannabich; and the Russian Official Journal of the Chamber of Merchants.)

ODIN, or OTHIN, was the principal deity of the antient Scandinavians and Northern Germans. 'Wodon,' or 'Gwoadan,' was another form of the name of Odin. Odin is represented by some as the god of war, the Mars of ancient German mythology. (Paulinus Diaconus; Adamus Bremensis; Braun, Religion der alten Teutschen.) Among the Anglo-Saxons, Wodon was the god of merchants, corresponding to the Hermes of the Greeks. The fourth day of the week, Thursday, derived its name from Odin. In the account of the origin of the world, as given in the older Edda, Odin, the eldest son of Bor, the second man, is represented as having, with his two brothers Vil and Vé, defeated and slain the first giant Ymer, out of whose body the whole body of the world is made. Odin and his brethren and antagonists are personifications of the elements of the world. [Mythology, Physhcal Theorv.] But there is another and a younger Odin, who is partly a mythological and partly an historical personage. The Teutschen and the Scandinavians, who were written by the chroniclers, mention is made of a chief, called Odin, who came from Asia with a large host of people called Aser, and conquered Scandinavia, where he built a city called Sigtuna, with temples, and established a worship and a hierarchy; he was elsewhere also the characters of the Bavarian and the Runic alphabet; he was in short the legislator and civilizer of the North. He is represented also as a great magician, and was worshipped as a god after his death, when some of his followers, to his second Odin, (Messenius, Scania Illustrata; Münster, Ecclesiastical History of Denmark; Finn Magnusen, Præce veterum Borealium Mythologiae Lexicon, Copenhagen, 1828.)

The epoch of this emigration of Odin and his host is a subject of great uncertainty. Some place it in the time of the Sibyl; others (and this has been the most common opinion among Scandina- vian archæologists) fix it about the time of the Roman conquest of Pontus, about 60 B.C. Suhm, in his Ge- schichte Scaniaen, says that Odin was the father of Føcelst. One was Bor’s son; he came from the mouths of the Tanais, and introduced into the North the worship of the sun. A second, the son of Hermodi, came with the Aser from the borders of Europe and Asia at the time of the invasion of Denmark; he came with the Aser through the Tanais, brought with him some temples, and established the mythology of the Edda: he is called Mid Othin, or Mittel Othin. A third Odin, according to Suhm, was the son of Fredle; he fled from the borders of the Cascaius to the time of Pompey’s con- quests, 50 or 60 years a.c. settled at Upsala, and distrib- buted Norway, Denmark, Gotland, and Scania among his several sons. The fourth Odin, called also the Saxon Odin, lived in the third or fourth century of our era, and is alluded to by Saxo Grammaticus and other chroniclers. All this however is far from being sure. The north-western emigration of Odin from the borders of the Cascaius to Scandinavia has the support of a uniform tradition in its favour. For the antient mythology of Scandi- navia, see Renæ.

Woden, or Odin, was worshipped by the Saxons, the Ale- manni, the Longobards, and other German nations, until their conversion to Christianity.

ODO, Bishop of Brixen. (Bayer Tapestry.)

The number of representatives from the Eastern church, originally served as a mercenary in the barbarian auxiliary forces which the later emperors of the West had taken into their pay for the defence of Italy. After the two rival emperors Glycerius and Julius Nepos were both driven from the throne, Orestes, a soldier from Pannonia, clothed his own son Romulus, yet a minor, with the imperial purple, but re- mained all the substantial authority in his own hands. The barbarian troops now asked for one-third of the lands of Italy to be distributed among them as a reward for their services. Orestes having rejected their demand, they chose Odoacer for their leader, who immediately marched against Orestes, who had already laid waste by fire and sword the city of Ravenna, where he was seized by his own soldiers. Orestes was taken prisoner and led to Placentia, where he was publicly executed, in August, a.d. 493, exactly a twelvemonth after the defeat of the Visigoths of Italy. [Nepos.] Romulanus, who was called Augustus and was the way of derision, was in Ravenna, where he was seized by Odoacer, who stripped him of his imperial ornaments and banished him to a castle of Campania, but allowed him an honourable maintenance. Odoacer now proclaimed himself king of Italy, rejecting the imperial titles of Caesar and Augustus. For this reason the Western empire as considered as having ended with the deposition of Romulus Augustulus, the son of Orestes. Odoacer’s authority did not extend beyond the confines of Italy. He was banished by the Danube, the Tyrrhenians, and the men of the events of his reign until the invasion of Theodoric, king of the Ostrogoths, who, at the instigation, as some historians assert, of Zeno, emperor of the East, marched from the banks of the Danube to dispossess Odoacer of his kingdom. Theodoric, according to our source, was a man of great courage and ability, having been banished from his native country, travelled into Aquileia, and entered Verona without opposition. Odoacer shut himself up in Ravenna, a.d. 493. The war however lasted several years; Odoacer made a brave resis- tance, but was compelled by famine to surrender Ravenna March, 496. Theodoric at first spared his life, but a short time caused him to be killed, and proclaimed himself king of Italy. (Procopius; Cassiodorus.)

ODONTIS. [Monodonta.]

ODON. [Tetracodium.]

ODOSTOMIA. Fleming’s name for a genus established from several small species of land shells—Turbo pecten, spiralis, unidentatus, &c. of Montagu. The following is the Generic Character.—Shell conical; aperture oval; peristome incompletely retracted, and furnished with a touch or pillar.

ODYSSEY. [Homer.]

GEOLAMPA/DIUS. [Zwingli.]

ECUMENICAL COUNCILS. During the first and the second centuries, observance of the Christian year was irregular, the Christian communities called churches were inde- pendenteach of each other. In process of time assemblies were held for the purpose of collecting the opinions of the churches on any points of faith or practice respecting which disputes had arisen. It was then decided to consult the Roman bishop, consisting of the bishops only, or of the bishops and some of the inferior clergy, as representatives of the churches. They had their origin among the Greeks, by whom they were named Synods (συνόδους, that is, Meetings), and were adopted by the Latins, who called them Concilia. Their decrees were called Canons (κανόνες), that is, Rules. We have no trace of them till towards the end of the second century.

Constantine the Great was the first who attempted to as-semble a council consisting of representatives from the whole Christian church. Such councils were called (Ecumenical (εκουμενικός), that is, general or universal, from their comprising the whole Roman empire, which, in common language, was considered as equivalent to the habitable world (Ecclesia), that is, the whole world.) None of such councils were considered to be binding on the whole church. The following list contains those which are considered as general councils by the Latin church. There were a great number of ecumenical councils in the second century of the church. Of those in the following list, the first seven alone have any pretensions to the title, as all the others were held after the schism between the Greek and Latin churches: the latter can be accounted occasional only by those who consider the church of Rome to consist of the whole Catholic church. At the first seven however the number of representatives from the Eastern church was very small.

1. The First Council of Nicer, convened by Constantine
to settle the Arian controversy, a.d. 325. [NICE, COUNCIL OF.]
Il. The First Council of Constantinople, convened by Theodosius the Great, to settle controversies respecting the Trinity. It added to the Nicene creed the words which refer to the divinity of the Holy Ghost, a.d. 381.
III. Council of Ephesus. It condemned the Nestorian heresy, a.d. 431. [NESTORIANS.]
IV. Council of Chalcedon, against Eutyches, a.d. 451. [CHALCEDON; EUTYCHIANS.]
V. The Second Council of Constantinople, convened by Justinian I, on the resurrection of the body and the pre-existence of the soul. It condemned the Originists and the 'Three Chapters,' a.d. 553.
VI. The Third Council of Constantinople, under Constantius. It condemned the Monothelites, a.d. 680. [EUTYCHIANS.]
VII. The Second Council of Nice. It approved the worship of images, a.d. 787.
IX. The First Lateran Council, convened by Pope Calixtus II. It decided in favour of the church's sole right of investiture to ecclesiastical offices, and decreed the celibacy of the clergy, a.d. 1122.
X. The Second Lateran Council, under Pope Innocent II., against the heretics Pierre de Bruis and Arnold of Brescia, and for the reformation of the church, a.d. 1139.
XI. The Third Lateran Council, under Pope Alexander III. It condemned the Waldenses and Albigenses, and settled the mode of electing the popes, a.d. 1179.
XII. The Fourth Lateran Council, under Pope Innocent III. It condemned the Albigenses, and defined the doctrine of the Investiture Controversy, a.d. 1215.
XIII. The First Council of Lyon, under Innocent IV., for promoting the Crusades, restoring ecclesiastical discipline, and dethroning the emperor Frederick II., a.d. 1245.
XIV. The Second Council of Lyon, under Gregory X., for the re-union of the Greek and Latin churches, a.d. 1274.
XV. Council of Vienne, under Clement V., convened to suppress the Templars, to condemn heretics, and to assist the antiquaries in Paleography, a.d. 1311.
XVI. Council of Constance, convened by the emperor Sigismund, to settle the papal schism. It condemned John Huss and Jerome of Prague to the flames. It sat from 1414 to 1418 a.d. [CONSTANCE; COUNCIL OF.]
XVII. Council of Basel. It sat from 1431 till 1448 a.d. [BASEL; COUNCIL OF.]
XVIII. Fifth Lateran Council, convened by Pope Julius II., to oppose another which had been held the year before at Pisa by nine cardinals, a.d. 1512.
CR. The Council of Trent, convened by Paul III., in order to crush the Reformation. It sat from 1545 to 1563 a.d. [TRENT; COUNCIL OF.]
OECEMENIUS was bishop of Tricea in Thessaly. The time at which he lived is uncertain: but it was after the eighth century and before the tenth. He is generally placed in the ninth century: Cave assigns to him the date a.d. 990, Lardner, a.d. 950. He wrote commentaries on the Acts, on St. Paul's fourteen Epistles, and on the seven Catholic epistles (and perhaps on the Revelation), in the form which is called a Catholic (chain), that is, containing, besides his own observations, the remarks of other writers. Among the authors thus quoted by him are Chrysostom, Cyril of Alexandria, Gregory of Nazianzus, Isidore of Pelusium, Theodoret, and Flotius. The best editions of his works are those of Verona, 1523, and Paris, 1631.
ODENBURG (in Hungarian, Soprony; the Soprenium of the Romans), the capital of the palatinate of the same name, is situated in a pleasant and fruitful country, amidst extensive vineyards and woods of chestnut-trees. It is about two miles and a half from the south-western part of the lake called the Neuseller See. The temperatures on the banks of this lake is milder than about Odenburg itself, and the best vineyards are now there. The inhabitants have been celebrated from remote ages for the culture of the vine and the excellence of their wines, but of late years this branch of industry has been some unexplained causes greatly declined, and the wine is very inferior to what it once was.
The town itself is not large, but it is regular and well paved; the suburbs are extensive and well built. The inhabitants, 14,000 in number, are Germans, whose ancestors came from Austria. Among the public institutions are the Roman Catholic chapters, a gymnasium (with 300 scholars) and a school, a Lutheran superintendency with a lyceum (360 pupils), and a Protestant German school (300 scholars). There are also a convent of Dominican monks, one of Ursuline nuns, two Roman Catholic churches, and a Protestant church. The inhabitants manufacture considerable quantities of woollen cloths, playing cards, snuff and tobacco, and sugar. They carry on a great trade in the productions of the country, and have well-frequented cattle fairs, at which not less than 40,000 head of horned cattle and 150,000 swine are annually sold. In the vicinity there are very extensive coal-mines.
Odenburg was founded by the Romans, and was the station of the fifteenth legion. Many Roman antiquities, inscriptions, coins, lamps, sarcophagi, &c, have been found in the neighbourhood.
ODICINE'MUS (literally, 'thick or swollen leg;' from old-Greek, to swell, and ευθυς, a leg), Belon's name for an interesting genus among the birds, which seems to be the connecting link between the two great groups of Bustards and Plovers.
Mr. Vigors terminates the family Charadriade by this form, which, in his opinion, by its affinity with the families of the same group, is more closely allied to the Gruidae of the order before us (Grallatres), and equally so to the Charadriadae, in consequence of the absence of the hinder toe. With the latter indeed it is frequently united into one group, from their similarity in this character, and the curious habits resulting from it, which are common to both. These three naturally allied families therefore are thus brought into contact, and their mutual affinities preserved; while at the same time they retain in the system the various stations into which the difference in their more important characters tends to separate them.
Mr. Swainson agrees in the main with Mr. Vigors. Linnaeus had previously placed the form among the Plovers, and Cuvier had made his family Prestrostres consist of the Bustards (Otis); the Plovers (Charadrius)—which he distributes into two subdivisions, Edicenmus, Tymmiine: and the Plovers properly so called, Charadrius—Vanelius, Bechst., consisting of the Vanellus Pluviers (Squatarola, Cuv.) and the True Plovers (Vanelius, Cuv.); Hematopus, Curorius, and Microractus, the Carrana of Brisson (Dicholopha), which last leads to the family of Cultivores, composed of the great genus Ardea of Linnaeus.
M. Tammineck, who appears to be the first among the moderns who applied the term **Edicenus** to the genus, places it at the head of its **Grallator**; and M. Lesson, in his 'Manuel,' places it among the **Charadriater** (Leach), between **Burhinus**, **Lile**, and **Himantopus** Bras.

Mr. Gould, who considers the genus as connecting the Bustards and Plovers, observes that he has often had occasion to remark, that while the normal or typical groups are abundant in species, the aberrant forms, which appear to be created for the purpose of filling up the intervening chasm, are restricted for the most part to a limited number of species: thus while the Bustards and Plovers comprise a vast multitude of species, the genus **Edicenus** contains at most but five or six, and these confined entirely to the region of the Old World (Birds of Europe).

**Generic Character.**—Bill strong, nearly straight, rather depressed towards the tip, culmen elevated, lower mandible angulated; nostril longitudinal, pierced through and through the horny part of the middle of the bill, and most of the time open. The culmen is not far from being as long as the second joint by a membrane which skirts their edges. Wings moderate; first quill shorter than the second, which is longest.

Example, **Edicenus crepitans**, Temm. — **Charadrius Edicenus** Lesson. **Description.**—All the upper parts of a reddish ashy-brown, with a longitudinal dash on the middle of each feather; space between the eye and the bill, throat, belly, and thighs, pure white; neck and breast slightly coloured with brown, and speckled with longitudinal brown stripes; a longitudinal white band on the wings; towards the middle of the first quill a great white dash, and a very small one on the interior bar of the second; lower tail-coverts ruddy; quill-feathers, except those of the middle, terminated with black. The tail bright brown on the outside, the rest naked skin round the eyes, iris, and feet, pure yellow. Length from the bill to the feet 16 inches 2 lines. **Male and Female.**

Such is Tammineck's description of the adult bird; but the plumage varies in some individuals. For instance, in the specimen figured and described by Gould, in his 'Birds of Europe,' there is an obscure bar of white above and below the eye, and the ground-colour of the flanks and under surface is stated to be yellowish-white; whilst the yellow toes and feet are noticed as having a tinge of green.

**Young Birds.**—These have the colours less distinct, and are detected at the first glance by the highly dilated form of the upper part of the tail and by the size of the knee-joint. Tammineck, who gives this description, adds that this form of the tail exists in the young of the year of all species of birds with long slender legs, but is particularly remarkable in the young **Edicenus**.

**Description of Belon, Le Grand Pluvier, ou Courlis de Terre of the French; Gran Pivieri, Ciurlo, Ciurlo, and Ciurlo of the Italians; Lerchengebra Regenpfeiler, Grosser Brachvogel, and Grosser Bragvogel oder Glauch of the Germans, among whom it is also called Trep, Tr. Griel, according to Thorer, who thinks that it is the Charadrius Aristotele; y Glin-bruff of the ancient British; Thick-knee, Thick-kneed Bustard, Stone Curlew, and Norfolk Plover of the modern British.**

**Habits, Food, Reproduction, &c.**—Rapid on foot, powerful in flight, which executes in wide circles, and horizontal and open places, this species is in general approached with difficulty by the sportsman, though it will often squat in places favourable to its colours, till it is almost too late. Their shrill evening cry pierces the ear, and may be heard far and wide in the still night. Stuffs, worms, reptiles, and, some say, mice, are eaten by them; but the two former seem to be their favourite food. White, in a letter to Pennant, dated 30th March, 1765, says, 'I wonder that the Stone Curlew, Charadrius Edicenus, should be mentioned by writers as a rare kind; it abounds in all the campaign parts of Hampshire and Sussex, and breeds. I think, all the summer, having young ones, I know, very late in the autumn. Already they begin camouflaging in the evening, and do not, I think, with any propriety, be called, as they are by Mr. Ray, "Dracena versans;" for with us, by day at least, they haunt only the most dry, open, upland fields, and sheep-walks, far removed from water: what they may do in the night I cannot say. Worms are their usual food, but they also eat toads and frogs.' No nest receives the eggs, which are two or three in number, of a light brown or dirty white, with dark blood-coloured blotches and streaks. 'It lays,' says the author of the charming history of Selborne, 'its eggs usually two, never more than three, on the bare ground, without an nest; in the field; and one of them, stirring its fellows, often destroys them. The young run immediately from the egg, like partridges, &c., and are withdrawn to some flinty field by the dam. Where the seat is among the stones, which are their best security, in their feathers are so exactly of the colour of marked flints, that the most exact observer, unless he catches the eye of the young bird, may be eluded. . . . **Edicenus** is a most apt and expressive name for them; since their legs seem swollen like those of a goose or duck. After harvest I have shot them before the season of turnip-fields.' In his MS. the same author remarks that they seem to descend in the night to streams and meadows, perhaps for water, which their upland haunts do not afford them.

**Geographical Distribution.**—Europe generally, where it seems to be migratory in many parts, in Britain and Germany for instance. Tammineck notes it as abundant in the south of France (in which country Belon found young ones that could not fly at the end of October), Italy, Saracen, the Greek Archipelago, and Turkey. It is also found in Asia and Africa. It occurred among the Trebizond collection of birds presented to the Zoological Society of London by Mr. Keith Abbott; and the localities attributed to it by Mr. Gould are Kun, the Athos, and the Greek Archipelago; but he is more likely to be a straggler, than a true inhabitant of Egypt, near the sepulchres, and in the deserts, in which country it visits the old wall of Crete. In Britain it arrives early in the spring. The period of the earliest record by White is the 27th of February, 1786, Stone Curlews being heard to pipe; and on March 1st, after it was dark, some were seen passing over the village, as might be perceived by their quark-like note, which they use in their nocturnal excursions by way of watch-word, that they may not stray and lose their companions. Thus we see that retire whithersoever they may in the winter, they return again early in the spring, and as, it now appears, the first summer birds that come back. Perhaps the mildness of the season may have quickened the migration of the curlews this year. They are seldom seen after the beginning of October; but Markwick states that he received on the 31st January, 1792, a bird of this species which had been recently killed by a neighbouring farmer, who said that he had frequently seen it in his fields (of Belchamp, Sussex), which he considered as retribution for his destruction of them during the former part of the winter. This, perhaps, adds Markwick, was an occasional straggler, which, by some accident, was preserved free accompanying its companions in their migration. As the autumn advances, these birds collect into flocks, soon after
which they leave this country. Norfolk, Suffolk, Kent, and Hampshire seem to be the favourite counties of the Stone Curlew; but it occurs, though rarely, in the Yorkshire Wolds, higher than which it does not seem to go in these islands. Mr. Selby says that he never met with it or heard of it in the more northern English counties, nor in Scotland. It does not occur in Mr. Thompson's Irish list in the Zoological Proceedings.

Utility to Man.—In the hands of a good cook this species is a delicate bird for the table.

In the Portraits d'Oieaux, the following quatrains well describes the bird and the reason for the name given to it by Belon:

* Leop peut nommer claquey, Osteradeau,
Parce qu'il est approchée de l'Oastadeau,
Qui sous le plu des genoux l'e regarde,
Le trouve gros plus qu'à son autre oyeaux.*

OELAND. [Alaland.]

Oels is a lordship, with the title of a principality, in Lower Silesia, and in the Prussian government of Breslau. Together with the principality of Oesel, Bernstadt, which has been united with it ever since 1745, it has an area of 78 square miles, above 90,000 inhabitants, and a revenue of £16,000, per annum, burdened however with debts of long standing. The soil is in general fertile, and produces much corn, flax, fruit, and also timber, the forests being very extensive. Game and fish are in abundance. The chief town Oels, situated in 51° 25' N. lat. and 18° 40' E. long., is a plain on the river Oelsa, has a population of 6100 inhabitants who carry on considerable manufactures of woollen cloths there are likewise extensive breweries. The palace or castle, in which there is a good library, with collections of works of art and natural history, is surrounded with walls and a moat, and has a beautiful park. There are in the town one Roman Catholic and 5 Lutheran churches, 3 hos- pitals, a Lutheran gymnasium, admirable establishments for the poor, an institution founded in 1821 for the promotion of morality among poor country girls, a theatre, &c.

The principality of Oels, after the death of the last Duke Charles Frederick of Münsterberg and Oels, in 1647, came to his son-in-law Duke Silvius Nimrod of Württemberg, founder of the line of Württemberg-Oels. This line becoming extinct in 1792, the principality came, through his only daughter and heiress Sophia Frederica Charlotte, to her husband Duke Frederick Augustus of Württemberg; and after his death, in 1805, to his nephew Duke Frederick William of Brunswick, who fell in the battle of Quatre Bras in 1815, the succession having been secured to him by Frederic the Great in 1785. After his death it devolved to his eldest son and successor Charles, who in 1825 made it over to his brother William, who still possesses it, since he assumed the government of Brunswick in 1830.

GENANTHE, a poisonous genus of sapaneous or umbiliferous plants, one of which, the *E. pimpinelloides*, appears to have been the *erisar* of Theophrastus and Dioscorides. The species are readily known, independently of other characters, by their fruits being, by the contraction of the rigid pedicles, strongly compressed into heads, the upper side of which is mucificated by the stiff straight long styles. The fruits have on each face five convex obtuse ridges, of which the marginal ones are a little the largest.

The species are all inhabitants of damp meadows or watery places, and are common in Europe. The most important is *E. crocata*, an inhabitant of ditches, banks of rivers, and similar situations. This plant, which Dr. Christian reckons the most energetic of the narcotic-accid poisonous plants of its class, has a root of many fleshy fingers, looking exactly like a dahita-root in miniature, but abounding in an orange-coloured fetid juice, which is also plentiful in other parts of the plant, and in which the deleterious qualities reside. The stem grows from two to five feet high, is much branched, round, and hollow. The leaves are of a dark shining green, doubly pinnate, with wedge-shaped leaflets variously and deeply cut. The umbels are large and convex, of many general and a still greater number of partial rays. The bracts of the involucres are variable in number and size. The flowers are white, tinged with purple. Cases of accidental poisoning with this plant, in consequence of its roots having been mistaken for ground-nuts, parsnips, &c., by ignorant people, are common. In general death takes place within three hours and a half of the poison having been administered, and often within the first hour.

...to the stomach. In man, it is composed of two layers of muscular fibres, an external longitudinal layer, and an internal, composed of circular fibres, by which the food is pro-
pelled towards the stomach, and which are lined by a layer of soft mucous membrane and a moderately thick cuticle continued from that of the lips and mouth. In many animals its interior is beset with numerous firm pointed processes directed towards the stomach to prevent any food that has passed through it from returning into the mouth; in the ruminants, on the other hand, it is one of the chief means by which the partially digested food is brought again to the mouth for the chewing of the cud.

G. STRIDE. A family of Dipterous insects of the section Atri of which the proboscis being either in a rudimentary state or wanting; the palpi are sometimes distinct and occasionally wanting; the antennae are short, enclosed in a cavity in the fore part of the head; the third joint is usually globular; the wings are usually very small; the abdomen is generally large; the wings have generally three posterior cells, of which the first is often closed.

It will be seen from the above definition that the G. stir of the modern cannot be the same as the G. stir (of the) of the ancient. According to the (Hist. Anim, iv. 4, &c.), Virgils (Georgics, iii. 148), Calian, and others, is armed with a strong tongue (proboscis), pierces the hides and sucks the blood of quadrupeds, and makes a peculiar kind of harsh humming noise. Mr. Bray & Clark, of the G. stir of the modern states that the G. stir, when not in the act of sucking nutriment, is silent.

The absence in some and the rudimentary state of the proboscis in others of the modern G. stir proves that these insects are of two species; and it is otherwise in variance with the description given by the ancient authors, that the G. stir have a strong proboscis, a circumstance, connected with the blood-sucking habits of the Tabanidae, another family of Dipterous insects, induces Mr. M. & Clark to believe that the G. stir of the modern is a new species belonging to that group. An ingenious paper on this subject, by the gentleman last mentioned, will be found in the 14th volume of the 'Linneman Transactions.'

Tabanidae are certain flies whose larvae are well known by the name of bots which deposit their eggs on the body of various herbivorous quadrupeds, so that the larva when hatched shall find itself in the neighbourhood of its appropriate food, either in the hide of the animal, in its intestines, or in the skin; each species of G. stir, almost invariably confines its attacks to a certain species of quadruped, and finds its nutriment in the same part or nearly the same part of that quadruped; from this circumstance the species are often named after the animal of which it is a parasite.

The larvae of the G. stir are usually of a conical form, and the segments of the body are generally furnished with spines; the organs of respiration are situated at the posterior extremity of the body, which is the largest; the mouth parts are attached at the anterior extremity of the body, consisting of soft maimails, whilst in those species which derive their nutriment in the stomach of an animal or in such a situation that they would be liable to be dislodged, the mouth is furnished with two hooks for prehension; these hooks are armed outwards so that when once inserted they retain their hold without any exertion on the part of the insect.

These larvae are divided by Latreille, according to the situation which they inhabit, into cutaneus, cercinal, and gastricus, as seen lined in the tumours, into which the others in some part of the interior of the head of the animal are attacked by them, and the last in the stomach. 'The eggs of the first,' says Latreille, 'are deposited by the parent upon the under side of the legs of some parasitic Order, composed of four tubes fitting one within the other, and arranged at the end with hooks and other appendages. This instrument is formed by the last annuli of the abdomen. These larvae are not compelled to change their domicile, but the attachment is the same as that of the generative matter on the skin; the ova of the other orders are simply deposited, and glued to various parts of the skin, either in the vicinity of the natural cavities into which the larva afterwards penetrate and take up their abode, or on those spots which the animal is in the habit of licking, by which means the larva are conveyed by the tongue to the mouth, whence they are carried with the food into the stomach, to the costs of which they attach themselves.' Mr. Bray & Clark thinks the food of these is most probably the chyle, which, being nearly pure albumen, may go wholly to the composition of their bodies, without any excrementitious residue. When full grown, they pass with the digested food, and falling to the ground, they seek some convenient retreat, in which they assume the pupal state and undergo their final transformation. A detailed account of the habits of several of the species of G. stir will be found in the article Bors.

In the most modern work on dipterous insects the following seven genera are enumerated as belonging to the family (G. stir).

1. G. cuterebra (Clark). Distinguishing character head somewhat swollen in front; buccal cavity triangular; proboscis very small and retractile; third joint of the antenna obtuse; stylet plumose; joints of the tarsi provided with glands, the larva of this species of G. cuterebra is found in North America, the G. cuterebra occurs under C. buccata; their larva are parasites on the horses and rabbits. A third species is found in Cayenne, the C. epichyades.

2. G. hyperderma (Clark) has the proboscis indumentum; a small fly deposits its eggs; no distinct palpi; the third joint of the antenna is very short and transverse. To this genus belongs the G. hyperderma which attacks the ox (Hyperderma bosii), the larva of which lives in the hide of that animal.

3. G. edemagena. This genus has the buccal opening linear, and enlarged above; it has no proboscis; the two palpi are placed near together and are two-jointed, the second joint is large, orbicular, and compressed; the claws and pads of the tarsi are large. Only one species of this genus is known; this is C. edemagena which is found in Lapland. The female fly deposits her eggs on the back of the rein-deer, and the larva live in the hide of that animal.

4. Cephenemyia has a very small rounded proboscis above which the palpi are inserted close together; they are two-jointed, and the second joint is globular; the third joint of the antenna is compressed, and the stylet inserted at its base. The body is broad and rounded. Cephenemyia trompe is found in Lapland; its larva lives in the flesh of the rein-deer, and in the same region other species of this genus are also found. It is however found in Saxony, where there are no rein-deer. The larva must find its nutriment likewise in some other animal.

5. Cephalemyia. In this genus the body is but sparingly clothed with hair, the head is very large and rounded at front; there are no cheek cavities; the palpi are wanting, or at least are only represented by two small tubercles; the stylet of the antenna is apical; the wings have two posterior cells.

But one species of this genus is recorded, the Cephalemyia ovis. The female fly deposits its eggs in the same as the sheep, and the larvae live in the frontal sinus.

6. Colax. Here there are likewise no buccal cavity. The mouth parts are inserted near the eyes; the stylet is terminal; the wings have no posterior cells; the first posterior cell is short and open, the third is closed, and the anal is long.

The only species hitherto discovered belonging to this genus is Colax lapponica; it is often inserted near the nostrils of some species of the same family. The larva is unknown. It is the Colax musculans of Wiedemann.

7. G. Etrus. This generic name is now confined to such species of the Etride as have no buccal cavity; the palpi wanting, or represented only by minute tubercles; the antennae are rudimentary, and have the first posterior cell entirely open.

To this genus belongs the G. Etrus whose larva or bots are found in the stomach of the horse, the G. Etrus. A larva of two other species (Etrus exornatus and Etrusus salutaris) are also found in the stomach of the horse.

The Etrus pocorum (a species found in Sweden), when in the larva state, is found in the intestines of the ox.

The larva of another species, the G. Etrus, is to be found in the oesophagus of the horse, the ass, the mule, the stag, and the goat.

6. C. MOUNT. [Greece: Thessaly.]

CETHRA, Dr. Leach's name for a genus of Brachydes Curtat., placed by M. Milne Edwards as the representative of the first division of the Diptera; the same fly as the Cryptopum Curtatii; and indeed his Cryptopum Curtatii is composed of this genus solely. Latreille made Etrus and

* Histoire Naturelle des Insectes Pipirine, by M. Magnan, in two volumes, forming part of the 'Suetes & Bullion.'
Calappa [Calappa] form the family Cryptopoda; but M. Milne Edwards is of opinion that the only character which they have in common with the latter is the existence of lamellifer prolongations on the sides of the carapace, dispositions which are also found in certain Leucosianas, whilst all the rest of their organization approaches that of the Crab.

Othra.
The whole surface of the body rugged and appearing as if eroded. Carapace a third wider than it is long, oval, strongly knobbed above, and with the lateral borders strongly bent downward and a little curved upward. Front entire and a little more projecting in the middle than on the sides. Eyest very small, the orbits nearly circular, their upper border with two small fissures, and the lower border separated from the front by a very large gap. Antennary fossa nearly square, and the basillary joint of the internal antennae filling them almost entirely; the moveable stem of these appendages very small, and bent longitudinally forwards. Basillary joint of the external antennae very large, and advancing up to the lower border of the front, so as to fill the gap which would otherwise make the orbit communicate with the antennary fossæ; its anterior extremity very narrow and upon the edge of the inferior orbital border; second joint of the external antennæ very small, occupying the internal canthus of the eyes, and supporting a stemlet which is rudimentary and very difficult to distinguish. External foot-feet completely closing the bucal frame; the internal border of their second and third joints straight: this last portion is strongly truncated at its posterior and internal angle, and hides almost entirely the paliform stemlet which has its origin under its anterior and internal angle. Ectal platæa much longer than it is wide. Anterior foot about once and a quarter as long as the post-frontal portion of the carapace, and of nearly the same form as in Parthenope, excepting that their upper and internal surface is slightly concave, so as exactly to fit the lower and anterior portion of the trunk; second pair of feet much shorter than the post-frontal portion of the carapace; the other pairs successively diminishing in length, and all surmounted with a sharp and unequal crest. Telson short and styliiform. Abdomen with seven segments in the female and five only in the male.

Place in the System.—M. Milne Edwards is of opinion that this form has great affinity with the genus Cryptopoda belonging to the family of Cryptopidae, and that it establishes the passage between those crustaceans and the other Cancerians, at the same time that it approaches Calappa, whose natural place is in the family of Oxystomes.

Geographical Distribution of the Genus.—East Indian and Australian Seas.

Example, Othra scuposa. Length 2 to 3 inches. Colour greyish.
Locality.—Iole of France and Indian Archipelago.

Oettingen, formerly an independent county in the north part of Swabia, now belongs partly to Bavaria and partly to Württemberg. Its area is 372 square miles, and the population above 61,000. It is a very fertile country, watered by the rivers Wermitz and Eger, and produces corn, hemp, flax, and timber. It has a good breed of horned cattle and horses, and is particularly famous for its greese. It abounds in fact in all the necessaries of life except salt. It has likewise iron, saltpetre, and remarkably fine stone for building. The county is now divided between two princes, whose common ancestor, Lewis XV., became at the time of his Retrenchment of 1669, Lewis XVI. founded the Protestant and Ferdinand the Roman Catholic branch: the former, which obtained in 1674 the rank of prince of the empire, became extinct in 1731; the latter was divided by the three sons of William the Elder of the present house of Hesse-Oldenburg-Bückeburg, who succeeded their grandfather in 1733; Oettingen-Wallerstein, which succeeded by will to the possessions of the extinct Protestant line, and obtained the princely dignity in 1774; and Oettingen-Baldern, which is now likewise extinct.

The province of Oettingen-Oettingen, situated in the circle of the Rezat in Bavaria, is 84 square miles in extent, and contains about 15,000 inhabitants. The prince resides in the town of Oettingen on the Wermitz, in 45° 57' N. lat. and 10° 38' E. long. The inhabitants, 3286 in number, are half Protestant, half Roman Catholics; there are 28 schools, six hospitals, and a well built town, has two palaces, a gymnasium, an elegant Lutheran church, a Roman Catholic church, a literary society, an orphan asylum, and manufactories of cotton, linen, and worsted.

The province of Oettingen-Wallerstein has a territory of 252 square miles, partly in Württemberg, partly in Bavaria, with 46,000 inhabitants. Wallerstein, the capital and residence of the prince, is a well built market-town, with 1500 inhabitants. The prince's palace is a handsome building, and contains a good library and a collection of paintings.

OFFENBACH [Buda.]

OFFENBACH is the capital of a circle in the province of Starkenburg, in the grand-duchy of Hesse, and belongs to mediatised principality of Isenburg-Besingen, which resides in a very pleasant and fertile country, about a league from Frankfort, on the bank of the Maine, over which there is a bridge of boats: it is surrounded on one side with a wall, on the other by a navigable canal which joins the Maine. It consists of the old and the new town, the latter of which is well built. The public buildings are a fine palace, a Lutheran, a French Calvinist, and 2 Calvinist churches, and a gymnasium. The population is 8000. Offenbach is the only considerable commercial and manufacturing town in the grand-duchy. The manufactures are various: the principal are leather, hats, silks, hosery, earthenware, all kinds of lacquered goods, gold and silver wire, jewellery, snuff, and tobacco, wax candles, white-lead, chocolate, and carriages, which are much esteemed all over Germany for lightness and durability.

OFFICE FOUND. By the common law of England, where the king is entitled, upon the occurrence of certain events, to take possession of real or personal property previously belonging to a subject, the facts upon which the king's title subsequently must be first ascertained by an inquisition or inquest of office. This inquiry is executed by some officer of the crown, such as the escheator, coroner, or sheriff, or by persons specially commissioned for the purpose, and the facts are ascertained by a jury of an indeterminate number, but consisting usually, though not necessarily, of twelve men. Such inquests were much more frequent before the abolition of military tenures, when inquisitions post mortem were instituted upon the death of one of the king's tenants, to inquire of what lands he was by the right of the crown possessed, and of other matters tending to establish the king's rights respecting the property of the deceased. [Jury.] When an inquisition of this kind has been executed and returned, it is said to be an office found. Thus when a treasure has been discovered under circumstances which do not give it to the owner of the land, an inquest is held, and the king, upon office found, takes it; and where a person of illegitimate birth dies intestate, the king (if he is the immediate lord of the fee), upon office found, is entitled to all his lands; to the latter case, however, the land is generally granted again to some person or persons who can make out the most reasonable claim to it. So also the verdict of a jury upon a coroner's inquest, declaring a person to have died us fato de se, is an office found, upon which
the king becomes entitled to take possession of the property of the deceased.

OFFICE, HOLY (Sanctum Officium), is the name of an ecclesiastical tribunal established in the thirteenth century by popes Honorius III., Gregory IX., and Innocent IV., to try heretics, blasphemers, apostates, relapsed Jews or Mohammedans, witches, and wizards, and other persons charged with infractions of the canons of the Church. The judges of this court were called inquisitors, whereas the tribunal itself has been commonly styled the "Holy Inquisition." The name of inquirors, or inquisitors, after having been authorized as early as the reign of Theodosius II., who, by his constitution against the Manichaeans and other heretics, A.D. 382, after adjudging the punishment of death for several aggravated cases of heresy, directs that "Inquisi-
tores ad quaerendum et erudendam hereticos" be appointed by the prefect of the Praetorians (Codex Theodosianus, Goth. ed., xvi., tit. 5, lex 9.) This is the first law under the Christian emperors by which the punishment of death is awarded for heresy. Constantine had only sentenced the Arians to banishment, though he threatened to punish with death those who should make use of the books of Arius.

The subsequent law of Honorius, A.D. 398, expels, besides the towns "Clerici" or priests of the Montanists and Eunomians, and if they persist in bringing people together, it banishes them for life; and condemns all persons who are found to conceal them to be beheaded. (Cod. Theod., xvi., tit. 5, 1. 34.) Two more constitutions or laws of Honorius (51 and 56 of the same book and title in the Theodosian Code) through persecution and examination and condemnation of certain heretics. These are the oldest laws on record which make heresy a capital crime; but it ought to be observed, that there is no law in the whole Theodosian Code which subjects heretics in general to the pain of death, that punishment being reserved for the leaders, those who pleaded assemblies of people, made proseeles, and preached or spread certain heterodox doctrines specified and condemned by the laws. The trial and punishment in all such cases were left to the civil magistrate.

In the same Codex, Theodosius I. had been persecuted of Arians by the Orthodox, and vice versa, carried on through the violence of individuals; but there was no special law making heresy a capital offence. Towards the heartlessness the case was different. Constantius (A.D. 337) had forbidden heathen sacrifices under pain of death. Theodo-
sius I. confirmed that law, and Theodosius II., after remitting the capital penalty (A.D. 423), put it in force again in 426. (Gothofredus, De Statu Paganorum.) Most of the earlier fathers, Tertullian, Cyprian, Lactantius, Hilarius, Ambrose, and others, had either been driven out, or driven in, and even when left to the civil government, the Church. Chrysostom and Augustine however think that heretics ought to be prevented from holding assemblies, and to be banished or burned, but not put to death. But it ought to be remembered that the heretics of those times, the Arians and Donatists in particular, constituted political factions which rebelled against the authority of the state, murdered their antagonists, demolished their houses, and committed all sorts of violence, as may be seen by the letters of Augustin.

The first person on record who was juridically condemned and put to death for heresy is Priscillianus, the leader of a sect in Spain, in the latter part of the fourth century. Two Spaniards, the name of whom is not known, or rather Priscillianus, with two other priests or bishops, before a council held at Bordeaux, A.D. 385. Priscillianus appealed to the emperor Maximus, who had assumed the imperial title from the Gaul, and who was then residing at Treves, whither Priscillianus and his friends had been sent by their prosecutor Iadius. Martin, bishop of Tours, interceded in their behalf; but after his departure from Treves, Maximus entrusted Evodius, the prefect of the Praetorians, with the trial of the accused, and upon his report Maximus condemned them to death. This sentence was generally censured, and Ambrose and Martin of Tours strongly rebuked the part which Iadius had acted, and which they characterized as unbecoming the episcopal character. The consequence was, that Iadius was excommuni-
cated, and died in exile.

Justinian, in the first book of his Code, in which he treats of the Catholic faith, and defines its creed according to the first four general councils, of Nicea, Constantinople, Ephe-
their houses pulled down, and their property confiscated to the community.' (Calz. Historie Patrie, b. xiii.; Corio, Storia di Milano, part ii., p. 72; Verri, Storia di Mil-

RIO, no less than fifteen sects of heretics, with strange names, are enumerated by these histori-

ans as having been discovered within the state of Milan. The archbishop of Milan at the time was Enrico da Settala, so great was his anxiety to root out the heretics, and he was singly or in groups taken before him, and almost as if by the power of mind, until people were such that they had become vie, and his answers might be used afterward as evidence against him. If the accused denied the charge of heresy, he was supplied with a copy of the instruction and depositions, but without the names of the accuser and wit-

tnesses, and with an order that he was to state in writing all that he might discover them. The accused having made his answer or defence, which was taken down in writing, if he denied the charges, the inquisitor, together with the bishop of the diocese or his delegate, if they thought proper, ordered him to be put to the torture in order to establish his innocence. The torture might be repeated three times, but it was afterward ordered to be applied only once; this regulation however was often evaded by suspending the tormentors and the fifteenth, and then continuing them to the point of torture. If in the end there were not sufficient grounds for the conviction of the prisoner, he was declared to be 'suspected of heresy,' was obliged to make a public abjura-

tion of all heresies, and was subject to certain penalties, according to the nature of the offense and the decision of the inquisitor. If convicted of heresy, but professed his repentance, he was condemned to prison for life, a penalty which however might be mitigated by the inquisitor. But if he was a relapsed, that is to say, had been tried before, and found guilty or not guilty there was no more danger of the 'relaxatus,' that is to say, given over to the law, who, according to the civil and canon laws, was bound to put him to death upon the sentence of the inquisitor which declared him a heretic. The only favour shown to the re-

lapsed and injudicious, who was not found guilty or con-

victed of heresy, was publicly burned alive. Such were the principal characteristics of the old or delegated Inquisition as it existed from the sixteenth century to the latter part of the fifteenth century. The construction of the Inquisitor, "one of the richest and most celebrated men in the world," was such as to allow of no more than fifteen persons to be put to death within a year. By law, the inquisitor proceeded ex-officio against those who were denounced, the name of the informer being kept secret: he examined witnesses privately in pre-

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required her acquiescence, and accordingly she solicited, by means of her ambassador at Rome, a Papal bull, authorising the establishment of an Inquisition in the kingdom of Castile. The bull, despatched from Rome in November, 1478, authorised Ferdinand and Isabella to appoint two or three bishops or other dignitaries of the church, aged at least forty years, of irreproachable character, graduates in the canon law, who were to be commissioned to seek after and discover, throughout the dominions of the Spanish sovereigns, all apostates, heretics, and their abettors, with full power to proceed against them according to law and custom. Isabella however suspended the execution of the bull for several years, desiring at the same time that measures of persuasion should be adopted to warn the relapsed converts of their error and of their danger. A catechism was composed expressly for them, and several pamphlets against Judaism were issued. In 1489 the Council of Bielencarn, held at Seville, passed a resolution restricting measures against the Jews, with the view of checking their intercourse with the Christians. Nothing however was said in that assembly about the Inquisition. At last, in September, 1489, Ferdinand and Isabella, who had sent the Dominicans as inquisitors, with an assessor and a fiscal attorney; and on the 9th of October a royal order was despatched to the governors of provinces to furnish the new inquirers and their retinue with everything necessary for their business; and at the same time the inquisi-
leges, or public acts, which were the same as those granted by the emperor Frederic II. to the inquirers in Italy in the thirteenth century. The inquirers established their court in the castle of Triana, St. Paul of Seville, whence, on the 2nd of January, 1489, they issued the first edict, by which they ordered the arrest of several 'new Christians,' as they were styled, who were strongly suspected of heresy, and the sequestration of their property, denouncing the pain of excommunication against those who favoured or abetted them. The number of prisoners soon became so great, that the Dominican convent not being large enough to contain them, the court was removed to the castle of Triana, in a suburb of Seville. The inquirers issued another edict, by which they freed every person from the pain of excom-
unciation, and excused them from all suspicion, if they had reconverted themselves to the Jewish faith or rites, or who gave reason for suspecting them of being relapsed, specifying numerous indications by which they might be known. Sentences of death soon followed; and in the course of last year, 1481, 299 new Christians were burnt alive in the city of Seville, 2000 in other parts of Andalusia, and 17,000 were subjected to various penalties. The property of those who were executed, which was considerable, was confiscated. Ma-
ria, Santa Fe, H. 24, ch. 3. By these executions a vast number of new Christians to emigrate: several who were condemned as contumacious or imperfectly restored to Rome, and appealed to Pope Sixtus IV. against the inquirers. The pope wrote to Ferdinand and Isabella, in August of the same year, to the archbishop of Seville, inquiring-appointed by them, revoking the authority which he had given to his majesty to appoint other inquirers, and reserving that right to himself, which he exercised by a brief in the following February. Among these new appointments was that of the famous Torquemada, Queen Isabella now wrote to the pope, requesting him to give a permanent and fixed form to the new tribunal, and to make its judg-
ments definitive without appeal to Rome, complaining at the same time that she was accused of having done all she could for the sake of the Catholic faith, for the sake of the confessions which follow the condemnations. The pope laid the proposal of Isabella before a committee of Spanish cardinals and bishops who were then at Rome, and among whose number was that of the Borja, afterwards Pope Alexander VI. 
By his advice Sixtus IV. despatched a brief to Isabella, appointing Manrique, archbishop of Seville, to be apostolic judge of appeal for all Spain, with power to decide on all appeals from the judgments of the Inquisition. By several other briefs, directed to the various archbishops of Spain, the pope gave them the power and regulated the manner of appointing the ordinary inquirers in the various dioceses. Notwithstanding these measures, appeals from Spain con-
tinued to be received at Rome; and the pope again wrote, in August, the same year, to the archbishop of Seville, ordering the proceedings against several individuals to be quashed, and recommending mildness and moderation.
This recommendation however had no effect. Soon after, the pope appointed Thomas de Torquemada, prior of the Dominican house of Segovia, in Castile, to be inquisitor-general of the kingdom of Castile; and by another, brief, dated 17th October, 1483, he made him likewise inquisitor-general of the kingdom of Aragon, with full jurisdic-
tion over all other inquirers in Spain and its dependen-
cies. A few days before, on 3rd February, 1486, Torquemada chose for his assessor and counsellors two jurists, J. Gutierrez and Tristan de Medinaceli; he created four subordinate courts, at Seville, Cordoba, Jun, and Villa Real; the last was soon after transferred to Cuenca. The Dominican fathers, who had been appointed inquisitors by the pope in February, 1482, at first refused to submit to the authority of Torquemada, but they finally yielded. Ferdinand at the same time appointed a royal council of the supreme Inquisition, 'Consejo de la Suprema Inquisicion de Castilla;' and passed an edict, fixing, for right and for life, and a bishop and two doctors-at-law were counsellors. The councillors had a deliberative vote at all matters of civil law, but the president alone judged in matters which concerned the canon or ecclesiastical law. Being sanctioned by a junta of the in-
quisters of the four courts which he had established and the chapter of Seville, thirteen 'briefs of approbation,' or articles, were promulgated at Seville, the 29th October, 1484. They are given at length by Llorente, in the 11th chapter of his History. New articles were added to them in 1488 and 1490, and lastly the inquisitor-general Valero, in 1492, added to them one which regulated ever after the practice and proceedings of the Spanish Inquisition. They are also given by Llorente, in the 22nd chapter of his work. They are substantial;
ly the same as those already enacted, as being in practice in the old Inquisition, but are more minute, and rather more unfavourable to the accused. By the old practice, for ex-
stance, the names of the witnesses for the prosecution were in many cases communicated to the accused, to whom the name only of the person who had given them was known. The prop-
erty of those who were condemned was not generally en-
forced under the old practice, and this was more particular in the case in the kingdom of Aragon, a circumstance which explains the resistance of the Aragonese, among whom the old or delegate Inquisitors had been established for cen-
turies, to the introduction of the new Inquisition as consti-
tuted by Torquemada. Another important characteristic of the new Spanish In-
quisition was its compact organization and independence of the pope. The terror of its vengeful power; for, without a juridic-
cion or the pope, he was proposed by the king and approved by the popes. He appointed all other inquirers under him, as well as assessors and other agents. He had full and discretionary power in the papal bulls in all matters of heresy. The grand inquisitors were appointed by the king, but the pope, and the pope, was in reality independent of both. He could refuse to submit to those papal decreals and bulls which he did not approve, by alleging that they infringed upon the rights of the Spanish monarchy; and he could evade the king's ordinances, by alleging the papal bull which forbade the inquirers to tamper with the secular power under pain of excommunication. Among the proofs of this assumed responsibility, one of the strangest is the famous trial of Carranza, archbishop of Toledo, on the charge of heresy. Carranza, who was bishop of the Borja, in Zaragoza, had quarrelled with Pope Alexander VI. in his last moments, and whom neither the briefs of the pope Pius IV. nor the remonstrances of the prelates assembled at the council of Trent could save from being convicted of the crimes of the Spanish Inquisition for more than seven years without a termination of his trial; and when last pope Pius V. demanded of the Spanish inquisitors an edict of the king, under pain of excommunication, that the arch-
bishop and the papers of his trial should be sent to Rome, all sorts of obstacles were thrown in the way of his deliv-
ery and his final acquittal by the pope. After the death of Pius V. new proceedings were commenced in Spain to prove the archbishop guilty of heresy, and on the informa-
tion being transmitted to Rome, Gregory XIII., who had ordained the Inquisition, was directed to declare, on the 14th April, 1576, that the arch-
bishop of Toledo was strongly suspected of believing heresy, but...
propositions qualified as Lutheran, and which had been deduced from the context of his writings by the casuists of the Inquisition. He was then sentenced to five years' confinement in a Dominican convent and other canonical penances. A few days after this sentence, the archbishop, who was then seventy-two years of age, was taken dangerously ill, and before receiving the sacrament, on the 30th April, he solemnly declared in presence of several witnesses ' that he had been charged; that his expressions had been distorted into a meaning totally different from his; that he however humbly submitted to the judgment pronounced by the sovereign Inquisition, and that he had had all the preliminary matters taken part against him in the trial, and would pray for them before the throne of Grace.' On the 2nd of the following May the archbishop died in the convent of La Minerva at Rome, in which he was detained, and where he was, as was allowed to the Pope, to be buried.

In the provincial towns lay magistrates were appointed to perform the same duty in the respective courts of the Inquisition. The Inquisition could not molest Jews or other unbelievers, or persons living under the protection of a foreign potentate. It could not take cognizance of cases of blasphemy or polygamy—which belonged to the secular jurisdiction—nor of witchcraft, nor of minor infractions of discipline, such as the buying or selling of meat on Fridays, &c. Numerous other checks are provided by the same statutes. In short, although the Venetian senate was obliged by prudential reasons to admit the Inquisition within its territories, it took care to render its inoffensive as possible. The famous letter of the state Inquisition, which was entirely a political institution and not a ecclesiastical one, is not to be confounded with the ecclesiastical Inquisition, is described under VENICE.

In Tuscany the grand-dukes Medici had provided that deputies appointed by the princes of Italy to attend the trials of the inquisitorial court, and should report to their superiors, and that no sentence should be executed without their sanction. But in the year 1566, pope Pius V., a zealous promoter of the Inquisition, demanded of the grand-duke Cosimo I. the names of the priests of a certain college of lawyers, and doctors of law, and well affected to his sovereign, but who had publicly adopted several tenets of the Protestant Reformers. Cosmo gave him up to the officers of Rome, but at the same time wrote earnestly to the pope to save him. Pius was unwilling to spare his life to his enemies, if he should be introduced in the kingdom of Naples, and that cases of heresy should be tried, as before, by the ordinary episcopal courts. These occurrences took place in 1546-7, and were the beginning of the dread tribunal, established a court whose office it was to watch against any attempt to introduce the same under any shape—a kind of inquisition under the Inquisition. The court, which continued to exist till the French invasion of 1550, was style 'Tribunale contro quello dei Sant Uffizi,' and was composed of deputies, chiefly noblemen chosen by the different Seggi into which the Neapolitan nobility was classed. To the Neapolitan character, mercenary and communicative, the secret and mysterious proceedings of the tribunal added a strange and fearful form of proceeding, that it took away the jurisdiction from the bishops, that it showed itself more a rival than a subject to the papal see, that it had repeatedly refused to send a copy of its trials to Rome, and that if it were introduced into Italy, the Italian prelates, by saving its terrors before their eyes, would become estranged from the holy see. The pope, being easily persuaded by the representations of the Inquisition, with King Philip, saying that if required he would, after consultation with the king and Lombardy, himself send inquisitorial commissioners from home, who should proceed not according to the Spanish arm, but according to the canon law, and without prejudice to the inquisitorial arm, to apportion the property, to degrade and deliver to the secular courts all clerical offenders, to call in if required the assistance of the Inquisition in their proceedings with cases they thought proper, to appoint fiscal attorneys, notaries, and other officials, and to hear and decide on appeals from the judgment of other inquisitors. The pope however declared that this bull he did not intend to make any alteration in the privileges of the Spanish Inquisition as then established.

In 1564 pope Pius IV. and V. confirmed and extended the powers of the Roman Inquisition, which however were resisted in the kingdom of France. In that kingdom there was no regular tribunal of the Inquisition. The Cardinal de Lorraine, under Henri II., had indeed appointed delegated inquisitors who acted as extraordinary judges in the trials of P. C., No. 1028.
the Inquisition during the three centuries of its existence, Llorente, who wrote with casiness and had access to archives of the tribunal, gives an approximate estimate of the number executed under each inquisitor-general, for which it results that the total amount in Spain is about 35,000 persons burned, either alive or after being strangled; some were executed by drowning, others were subjected to terms of imprisonment, to the galleys, or subjected to the penalties. During the eighteenth years of Torquemada inquisitorship alone, about 8500 persons were burned. The calculation does not include the Spanish colonies, nor the inquisitorial court established in South America under the Spanish Inquisition. It is impossible to ascertain an amount of the victims of the Inquisition in those as well as in other countries of Europe. The last person burnt in the sentence of the Inquisition in Spain was a man named Rosario, who having formed an agreement with the inquisitors, it was burnt at Seville, on the 7th November, 1751. In three last inquisitors-general, from 1783 to 1805, did sentence any one to death.

In examining the history of the Inquisition under various forms, two things ought to be carefully distinguished, the principle and the practice of that remarkable institution. The fundamental principle of the Inquisition is, heresy, that is to say, dissent from the tenets of the Roman Catholic faith, being punished as such with temporal punishment. This principle however is not peculiar to the Inquisition: it is that of the canon law, and has the countenance of the Roman law in several cases of the early Christian emperors. In every country from which it was introduced, it was received by the principle subsists, although it may be dormant, subject of such a country who should openly dissent. The established Church is liable to prosecution by the ecclesiastical or the secular courts. This is still the case in several states of Spain and Portugal under the new constitutional governments, at least until a new law shall be enacted. It must not be forgotten that the Inquisition was established in Spain while the Cortes of Aragon and Castile were still in full vigour. It is not large enough to imagine that the subjects of both were still in force by which persons, dying in a state of heresy, cannot bequeath their property. It is not there sufficient for the Inquisition to be abolished in a country, in order to ensure liberty of conscience; it is not even in states of having formed a positive and providential government, as long as the canon law remains in force, and the majority of the people do not tolerate dissent. The small democracies of the forest cantons of Switzerland which are exclusively Roman Catholic, no dissent from the Church, are considered as rituals of heresy are seldom punished or obliged to emigrate.

In speaking of religious liberty, people are apt to remember three things very distinct, such as toleration, liberty of conscience or of opinion, and full religious liberty. The first applies to forms of worship a sect or a faith from that established in the country which they were to visit or inhabit for a time, and who are tolerated, that is to say, allowed to remain unmolested, and in some cases even permitted to have chancels of their own denomination. This is now the case in almost every European country, at least with regard to particular Christian communions and to Jews. The Lutherans and Calvinists have chapels in all the Catholic state, and even at Rome and Naples. But the question is in many cases, to what extent they may be permitted to have chapels of their own denomination. The Inquisition continued in Spain till the Revolution of 1820, when it was again suppressed by the Cortes. During the time of its re-establishment in 1783, six bishops were arrested, but none appear to have been put to death in consequence of its judgments. When Ferdinand, in 1823, a second time overthrew the constitution, he did not re-establish the Inquisition. In Portugal, the Inquisition, which was likewise abolished by the Cortes, has not been restored.

Various and often exaggerated accounts have been published of the number of persons put to death by the Spanish Inquisition during the three centuries of its existence, Llorente, who wrote with casiness and had access to archives of the tribunal, gives an approximate estimate of the number executed under each inquisitor-general, for which it results that the total amount in Spain is about 35,000 persons burned, either alive or after being strangled; some were executed by drowning, others were subjected to terms of imprisonment, to the galleys, or subjected to other penalties. During the eighteenth years of Torquemada inquisitorship alone, about 8500 persons were burned. The calculation does not include the Spanish colonies, nor the inquisitorial court established in South America under the Spanish Inquisition. It is impossible to ascertain an amount of the victims of the Inquisition in those as well as in other countries of Europe. The last person burnt in the sentence of the Inquisition in Spain was a man named Rosario, who having formed an agreement with the inquisitors, it was burnt at Seville, on the 7th November, 1751. In three last inquisitors-general, from 1783 to 1805, did sentence any one to death.

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Various and often exaggerated accounts have been published of the number of persons put to death by the Spanish
edict of the emperor Joseph of 1784, wherever there are 100 families of Protestants in one place, they may ask of the authorities permission to open a place of worship. Liberty of conscience is only found in countries where the constitution be part of the population dissent from the established church; it does not exist in the Italian states or in other countries exclusively Roman Catholic. All the Protestant states of Europe allow liberty of conscience. For example, it is impossible for a pagan to sit in the senate and not only every man may hold what opinions he pleases, but when every Christian sect may openly profess its faith and perform publicly its rites; and this not by special permission, but as a right of legal right. This is the case at present only in England and it is to be hoped that if the experiment was made in America. But even those countries cannot be said to have unlimited religious liberty, for this would mean that any one might set up any form of worship that he pleased. Now it cannot be believed that Potosi or other pagan rites would be publicly allowed in England or America. Therefore the religious liberty of England and America can only be said to extend to the various Christian and Jewish communions. And indeed it is questionable whether religious liberty in its full unlimited extent could exist in any orderly community of which religion is a part. The limits of the question are not how far what would be called liberty by some, would appear offensive and scandalous to the rest. Besides which the danger of proselytism must necessarily complicate the question still more. Mohammedans tolerate Christian missionary efforts not without hostile-looking despatches from the Koran. In the great French revolution, even those who professed to disbelieve all revealed religion, and who advocated free religious freedom, when they came to have the power in their hands, were the first to overthrow one of the oldest and best old custom, but shut up the churches, persecuted the priests, and denounced religious meetings as treasonable. They would allow no dissent from incredulity. So much are men of all ways of thinking disposed to intolerance towards those who do not hold their religious tenets, not only in religious matters, but also in matters political, social, and even literary or scientific.

In the case however of countries in which penal statutes exist against heretics, it is still an important question how and when and by what means those statutes are to be enforced. We have no such laws as those which have existed in the Papal State, where, the government being in the hands of ecclesiastics, the jurisdiction of the canon law is kept distinct from that of the civil law, and has its own courts, of which the Inquisition is the principal. The day is past, when in countries exclusively Roman Catholic, does not encourage spies and informers to pry into men's religious sentiments: it does not, like the Inquisition, consider men guilty merely because they silently dissent from opinions regarded by some as true. The essential distinction between opinions and acts, and leaving the former to man's conscience, it takes cognizance of the latter only. In doing so it goes back to the principle of the Theodonian and Justinian codes, whose constitutions against heretics were directed against those who made an open practice of their heretical opinions, who assembled meetings, preached or spread their doctrines by writing, attempted to make proselytes, and thus disturbed the unity of the church and the tranquility of the state. They were punished by the civil as well as the ecclesiastical courts. Thus the civil as well as the ecclesiastical courts. These two actions, and their open acts were evidence against them. It was only in the thirteenth century that the Inquisition set about discovering private and silent heretics, and having once established the principle that it was not necessary to forfeit our civil rights for existence of our opinions, the same results were obtained from the orthodox church, all kinds of means were thought lawful for this purpose. Hence a system of secret and even anonymous denunciations was encouraged, domestic privacy was invaded, acts innocent in themselves were punished as heretical, and opinions were given to private malice and revenge, as the informers were safe from the risk of discovery. The bad character of an informer or his relative position towards the accused was no objection to his accusation being preferred, whilst, by a striking contrast, the Inquisition would closely scrutinize the character of the witnesses whom the accused called in his defence. Con-

fessors were bound to exact of their penitents, under pain of non-absolution, that they should go and denounce to the Holy Office any person of whom they knew or had heard anything which appeared contrary to the Roman Catholic faith. The witnesses summoned by the Inquisition for the prosecution were not informed of the subject on which they were called upon to give evidence, but they were asked at first whether they had seen or heard anything of any one who was to be denounced, and then to whom they had spoken; and if they mentioned the name of the accused, they were afterwards informed of the charges against him, but was told generally that there were good grounds of accusation against him, which he left to prove. It was an act of mercy. Afterwards even the act of accusation of the fiscal attorney was not communicated to him in writing, but the particular charges were read to him in the hall of audience, and he was interrogated on each head, whether it was the truth. When the accused was called upon in his defence, he was obliged to choos-e for his counsel among the list of the Inquisition lawyers, who was not permitted to communicate with him in private, and who did not know the whole of the proceedings nor the names of the wit-nesses. The limits of the Inquisition thus, as the history further in exhibiting the other peculiarities of this strange system of proceedings, but the reader will find a full account of them in Llorente's chap. ix., on the proceedings of the Inquisition in Limborex. In the seventeenth century, attacks on the terroristic state of things, which it wrought against this tribunal, which excited the war in the Netherlands that lasted nearly half a century and ended in the delusion of the country of the infant bride, the crown of Spain, which caused rebellions in Aragon, Sicily, Sardinia, and Naples, and embittered the religious feuds and wars of the sixteenth and seventeenth centuries. And yet with all the ingenuity displayed for the discovery and conviction of heretics, it is averred that a great number of individuals were admitted to death by the Inquisition were orthodox Catholic. Among other proofs of this are the letters of Pietro Martire d'Angleria, councilor of the Indies, quoted by Llorente, ch. x., the trials of Carrauxa and many other bishops, and even the religious who have been canonized. So much respect is paid to the life of the Inquisition by the Inquisition were orthodox Catholic. Among other proofs of this are the letters of Pietro Martire d'Angleria, councilor of the Indies, quoted by Llorente, ch. x., the trials of Carrauxa and many other bishops, and even the religious who have been canonized. So much respect is paid to the life of the Church, such as St. Francis de Borja, St. Ignatius Loyola, St. Théréza, St. Juan de la Cruz, &c. Even popes have not escaped the attacks of the Inquisition. Sixtus V. having published an Italian translation of the Bible, the Spanish Inquisition placed it in its list of forbidden books. The same Inquisition condemned the works of Cardinal Noris, a friend of Benedict XIV., who wrote in a strong manner to the inquisitor-general on the subject. These were other disputes about the Spanish Inquisition with Pius V., Clement VIII., and Sixtus V. popes, among other things the libel of the works of D'Angeterra, of which they were displeased, which it paid to the papal authority whenever it came in opposition to its own assumed supremacy. It is an error to suppose that intolerance is peculiar to the Roman Catholic Church. All sects, whether religious, Jews, Mohammedans, and heathens, Arians and orthodox Greeks and Latins, Protestants and Catholics—all have persecuted in turn; but no other church or sect ever invented or enforced for centuries a permanent system of persecution that can be in any respect compared with that of the Inquisition.

OFFS sets are lines drawn perpendicular to the chord of an arc, or the longest base of an irregular polygon, from points in the arc, or corners of the polygon. By Oglethorpe, General. [Georgia.] O'Gyges, or Oggyus ({*Ogyges, Ogyus*},) is said to have been the first king of Athens and of Thebes. (Tzet*z., lib. ii. c. 1296.) The attachment of the Thebans to the Eleuthereus, who were the most ancient inhabitants of Boeotia, were the subjects of Ogyges, and that Thebes itself was called Ogygian, an epithet which is also applied to it by *Aeschylus.* (Paus. ix. 5; *Athen. Pers. 57.*) That Ogyges was closely connected with Thebes as well as Attica appears from the tradition, according to which he was said to be the son of Boeotus. (Scol. on Apollon. i. 1179.) It may also
be mentioned that the oldest gate in Thebes was called Ogygian. (Paus., ix. 8. 3.)

The name of Ogyges was connected with the antient deluge which preceded that of Deucalion, and he is said to have been the only person saved when the whole of Greece was covered with water. We possess scarcely any particulars respecting him; and the accounts which have come down to us are too vague and unsatisfactory to enable us to form even a satisfactory conjecture on the subject. He clearly belongs to mythology rather than to history. The earlier Greek writers, Herodotus, Thucydides, Xenophon, &c., make no mention of his name; but the accounts preserved by Pausanias and other antiquaries appertain to the greater antiquity of the traditions respecting him. Various etymologies have been proposed of his name. Mr. Kenrick supposes that the word was derived from the root yyy, signifying darkness or night, and quotes a passage of Hesychius in support of his view, which appears however to be corrupt.

The more favourite theory of modern scholars connects the name with Oceanus; which etymology is supposed to be supported by the tradition which places Ogyges in the time of the deluge. In support of this view it is remarked that Ogyges is a reduplication of the radical syllable _ORIGIN_ or _OC_, which we find in Oceanus, and in Ogen (which is explained by Hesychius as equivalent to Oceanus, _Ουεια_, _Ουαίωι_); and that a similar reduplication takes place in _Iρογ_, _Iρωι_ (Vesp.), _Deucalion_, which are more gesses. The name of Ogyges is supposed to be applied to the island of Calypso because it lay in the ocean. But whatever may be the etymology of the name, the adjective derived from it is frequently employed by the Greeks to indicate any place resembling the ocean. We learn from the Scholiast on Hesiod, that according to one tradition Ogyges was the king of the gods; and it is not improbable that the name originally indicated nothing more than the high antiquity of the times to which it referred.

(Philological Museum, No. 5. 'On the early Kings of Attica,' by Mr. Kenrick; No. 6, 'Ogygss,' by Mr. Thirlwall.)

OHIO, River. [MISSISSIPPI, RIVER.]

OHIO, one of the states of the North American Union, lies between 38° 30' and 42° N. lat. and 80° 30' and 84° 50' W. long. It extends from east to west 220 miles in length, and its breadth from north to south varies between 93 and 200 miles; its average breadth may be 182 miles. On the west it is bounded by the state of Indiana by a meridian line running south to the Ohio river, and measuring 170 miles. On the north lies the state of Michigan, from which it is separated by a straight line 50 miles long. Lake Erie, which borders it on the north and northeast, is about 170 miles in length. A meridian line running from the Ohio to Lake Erie, and dividing Ohio from Pennsylvania, is 93 miles long. The southern and south-eastern boundary is formed by the river Ohio, whose tortuous course along this line is about 500 miles. The total area is about 40,000 square miles, or not much less than the kingdom of Portugal.

Surface and Soil.—The surface of this state may be divided into the Hilly and Prairie Region. The Hilly Region comprehends the eastern and southern districts, and may be reckoned as separated from the Prairie Region by a line commencing at the most north-eastern point of the state on Lake Erie, and running in a south-south-western direction to Zanesville on the river Muskingum; from this place it extends south-west to the border of Indiana near Eaton. Each region occupies about half the area of the state.

The Hilly Region contains some low and level land along the Ohio, but the level land does not extend more than one mile as an average, in a line from the mouth of the river. There are in some parts swampy and subject to inundations. Behind this level tract the country rises suddenly into steep hills, called River Mountains, which vary in height, but in general range between 300 and 500 feet above the level of the river. From the summit of these hills the country extends in an uneven hilly plain swallowed by valleys; the hills are comparatively small, though very steep. Their summits form level plains of moderate extent. Rocks render the surface at some points barren; but for the most part, though secondary limestone and sandstone prevail at a moderate depth below the surface. There are no precipices except along the numerous watercourses. The general elevation of these uplands varies from 800 to 1000 feet above the sea-level. The inequalities of the surface do not render the soil less fertile, but rivers, which are frequently extensive, are exceedingly fertile, and produce very rich crops of grain. The declivities of the hills, when not too steep for cultivation, and the higher grounds between them, are less fertile, but by no means bare and barren, as they afford us to the present day an uniform line of uniform fertility, as the soil of the valleys is very deep, and contains much lime and vegetable mould; the soil of the uplands is not so deep, though more so than is usually found in hilly regions. As the soil is light and porous, the vegetation of the hilly region is extensive.

In its natural state the whole region is covered with trees. The uplands contain different kinds of oak, hickory, walnut, ash, poplar, dogwood, mulberry, sassafras, and some yellow pine. The levels along the Ohio and the other rivers are covered with but few woody plants. The most common are black walnut, hickory, cottonwood and sycamore, most of which, especially the sycamore, attain a gigantic size.

Rivers.—The Ohio river runs along the eastern and southern boundary of the state, from its source in the Alleghany Mountains, dividing Ohio and Pennsylvania. It is formed by the confluence of the rivers Potowatamie and Muskingum, and receives the Cuyahoga and other rivers which drain this country, though comparatively small, have recently acquired great importance, as affording the means of establishing a very extensive water communication in the interior of the state and between the contiguous states of Ohio and Pennsylvania. The Ohio enters Lake Erie at the point to which it is annexed to the lake is about 300 miles.

The most important of the rivers which fall into Lake Erie are the Maumee, the Sandusky, and the Cayahoga. The Maumee is formed by two branches, the St. Mary's and the
St. Joseph's river, of which the former rises in Ohio, and runs north-west, and the latter originates in the state of Michigan. St. Mary's river swells to such a size that the sea is navigable from St. Mary's Fort down ward during half the year for large boats carrying from 100 to 200 barrels of flour; during the rest of the year, in the dry season, there is scarcely water enough to float a canoe, and the course is much impeded by drift-wood. St. Joseph's River is stated to be navigable for 50 miles for boats. Both rivers unite after a course of about 70 or 80 miles at Fort Wayne, at a very acute angle, and then run east by north to Lake Erie, under the name of the Maumee. The Maumee runs about 160 miles, and during the last 40 miles, the current is nearly in a straight line, and is navigable for flour along the whole of its course. In the dry season the navigation is impeded by sand-bars. It empties itself into the western corner of Lake Erie by a wide mouth called Mauki Bay. The Sandusky river originates near 83° W. long. and 40° 45' N. lat., in two branches, which flow westward, and after their union turn northward. Towards its mouth it declines to the north-east, and falls into Sandusky Bay, a shallow sheet of water united to Lake Erie by a narrow strait. This river is navigable for boats about 100 miles, and is navigable for small boats during the early part of the year.

The Cayohoga is the most important of the rivers which fall into Lake Erie, though its course does not exceed 80 miles. It rises west of 81° W. long. and in 41° 55' N. lat., about 10 miles north of the town of Cleveland. The cold is considerable in winter and the navigation extends south-west and south-western direction to 41° 8' N. lat., where it takes a north-north-western course to Lake Erie. In its natural state it was not navigable, but the waters are used to feed the Erie and Ohio canal.

The Miami and Wabash rivers which fall into the Ohio are the Big Beaver, Muskingum, Scioto, and Miami rivers. The Big Beaver rises east of the upper course of the Cayohoga river, and runs in an eastern and southern direction for more than two-thirds of its course. In these parts it is not navigable on account of its rapid current. At 44° 21' lat. entering Pennsylvania, it receives from the north, near New castle, the Shenango river, and from this place downwards, a distance of 24 miles, is navigable for river barges. The Muskingum river originates in the state of Pennsylvania, near the turn of the Ohio, in the eastern corner of Ohio, and is joined by the eastern branch of the Tuskawara and the western Chippewa Creek. By their union they form the Muskingum, which flows about 70 miles south, then nearly the same distance west, and lastly about 70 miles south-east. This river has much water, and is navigable for boats all the year for about 140 miles upward; when the waters are high, small vessels may ascend the Tuskawara Creek nearly to its source. Its waters are increased by many considerable affluents, which in its mouth above 42° there are 12. The Scioto river rises near 40° 30' N. lat., and flowing southward nearly through the middle of the state, falls into the Ohio after a course of about 250 miles. At its mouth it is 42° lat. near the sea-level. It is navigable for large boats nearly 200 miles from the source of the Scioto river, and runs in a general southern direction about 165 miles. It becomes navigable a few miles above Picqua for keel-boats, during the year. At Piqua there is a considerable rapids, and the navigation is cut to avoid it in ascending the river. In the dry season it ceases to be navigable at Dayton, about 80 miles from its mouth. The navigation is always rendered difficult by numerous sand-bars. At its mouth it is about 400 feet above the level of the sea.

Canals.—The moderate elevation of the country between Lake Erie and the Ohio river, and its gentle slope towards both basins, suggested the idea of uniting them by a canal. It was found that the Ohio at the mouth of the Muskingum river, and at the Mouth of the Wabash, and the highest part of the intervening country, near the source of the Muskingum river, was only 337 feet above Lake Erie. A canal was accordingly made, which united the Muskingum and Scioto rivers. This canal, called the Scioto and Muskingum canal, was completed in 1823. For 14 miles above and 31 miles below it, the Erie and Ohio Canal, is 324 miles in length, has 44 locks, and begins at Cleveland, where the Cayohoga falls into Lake Erie. It runs southwards along the Cayahoga river to its most southerly bend, where it is a little more than half the highest level. It then follows the course of the Muskingum first south and then westward. Where this river bends again to the south, the canal continues westward and reaches the Scioto river, about 10 miles south of Columbus, from this point it runs along the course of the last-mentioned river to its mouth near Portsmouth. It passes the towns or villages of Newark, Coshocton, Circleville, Chillicothe, and Pikeston. There are several short branches from the main canal, one of which runs to Columbus, the capital, and is eleven miles long. Another canal has been made to remedy the difficult navigation of the Miami. It is 65 miles long, beginning at Dayton, and runs through the Ohio to the mouth of the Miami to Hamilton, whence it runs southward to Cincinnati on the Ohio. A canal was begun some years ago which is to unite the Wabash river of Indiana with the Maumee. It is to be 211 miles long, of which 136 are in Indiana, 26 in Ohio. We do not know how far this work has advanced.

Climate.—In comparing the climate of Ohio with that of England, it appears that the climate of Ohio is colder in winter and warmer in summer. The mean annual temperature at Cincinnati on the Ohio, which is sheltered from the north by high hills, was found, after many years of careful observations, to be 53°6', or about 3°8' higher than that of London. The mean temperature of the winter at Cincinnati is 36°, at London 39°; that of the spring at Cincinnati 63°, and at London 54°; that of the summer at Cincinnati 72°, and at London 61°; that of the autumn in Cincinnati 43°, and at London 44°. This shows, that the winters are somewhat colder in Cincinnati than in London, and the summers warmer, which is in accordance with the fact that the sun is exposed to the sun's rays remains frozen during a month, though the mean temperature of January is more than two degrees below the freezing-point. The frost does not penetrate to the depth of more than five or six inches. Night-frosts begin before the first week of March. In May and in June the heat increases rapidly, and the difference of the mean temperature of the spring in London and Cincinnati amounts to 9°. For about fourteen days in summer the heat is such that the thermometer rises to 30°, and sometimes it is colder than in London, and the first night-frosts occur at the end of September or beginning of October. The greatest decrease of heat takes place in October. The mean temperature of the Ohio in May is 61°2'; in May 14°, in May; the mean annual quantity is stated to be 36 inches.

Producns.—The wealth of Ohio consist in its agricultural productions: Indian corn, wheat, rye, oats, barley, and tobacco are extensively cultivated. Corn arrives at ma-
on the upper course of the Sandusky river, between Columbus and Lake Erie. This tribe consists of less than 500 individuals; they cultivate some grain and keep cattle. The population, exclusive of the Indians, amounted, according to the census of 1830, to 937,993 individuals, of whom little more than 9000 were free colored people, and the rest were the descendants of Europeans. The great mass of the people is from the New England states. As no state in the Union has lately increased more rapidly in population, it is probable that by the census to be taken in this year [1840] there will not fall much short of 1,000,000 individuals. The population is not equally distributed over the surface of the country. The valley of the Ohio is not so populous as might be expected. Large tracts of it are but thinly settled, especially that which extends from the mouth of the Muskingum to the vicinity of Steubenville. The settled districts are those of the hilly region which extends along the large rivers. The eastern districts of the prairie region, where the wooded tracts exceed the woodland plains, are nearly as populous. But nearly one-fourth of the state, or its north-western portion, is still thinly settled.

Political Division and Towns.—Ohio is divided into 75 counties. Columbus, the seat of government, is on the left bank of the Scioto river, very near the centre of the state; the population in 1835 was 4900, in 1812 the town and district of about 1000 inhabitants. Its trade is at present, and cannot rise to importance until the north-western portion of the state is better settled. The largest town is Cincinnati on the Ohio [Cincinnati]; its population has increased so rapidly since the opening of the Erie and Ohio Canal, because the produce of the eastern and better cultivated portion of the state goes now to Cleveland, and thence to New York or Montreal. Cleveland on Lake Erie, where the Erie and Ohio Canal begins, may be considered as the principal town of the state; its population in 1830 was 1076; in the beginning of 1835, one year and a half after the opening of the canal, it had increased to 4200 inhabitants, and it is now about 10,000. Steubenville, on the Ohio, contained about 3000 inhabitants in 1830, but 50 miles below it, at Zanesville, on the river Muskingum, a thriving place, had 3500 inhabitants in 1830, with some glass and vitriol manufactories and numerous flour-mills. Marietta, at the confluence of the Muskingum with the Ohio, is the oldest settlement of the state, being founded in 1788; it contained in 1830 about 1200 inhabitants. Portsmouth, at the mouth of the Scioto, and the termination of the Erie and Ohio Canal, is a thriving and populous place. Chillicothe, a well built town, in a very fertile tract on the river Scioto, has about 3000 inhabitants. Athens, on the Muskingum, and the beginning of the Miami Canal, has also about 3000 inhabitants. On the shores of Lake Erie is the small town of Huron, at the mouth of the river of the same name, which contains also on some tracts of land.

Manufactures.—Though this branch of industry cannot be expected to have made much progress in a country so lately settled, yet there are several manufactures of iron, wool, and cotton, although generally on a small scale. At Cincinnati and Cleveland, many vessels are annually built, especially steam-boats. The manufacture of salt is of importance. In 1830, 446,350 bushels were made, chiefly at and near Lancaster, south-east of Columbus.

Commerce.—Until the opening of the Erie and Ohio Canal, the trade of the state was confined to the city of New York by the line of the Genesee and St. Lawrence, and by water to Montreal on Lake Erie, and the Hudson river, does not much exceed 650 miles, and from Montreal in Lower Canada it is even less, whilst the distance of Cincinnati from New Orleans by land is 860 miles, and by water considerably exceeds 1000 miles. Besides this, the navigation on the Ohio and Missippi is much more precarious and dangerous [Mississippi] than that on the canals, the Lake Erie, and the Hudson river, or on the St. Lawrence to Montreal. It therefore probable that in a short time the greatest part of the produce of Ohio will find its way to Cleveland and thence to the cities at the western boundary of the state, and the state will be supplied with foreign goods. Commerce however will always be the commercial depot of the produce of the rich valley of the Miami river, and will contain a considerable place of trade. In 1833 its exports were valued at 2,000,000 dollars, its imports at 1,530,000. Some commerce is carried on by Balclutha by way of Wheeling in Virginia, and with Philadelphia by way of Pittsburgh, but it is not of great importance, in account of the heavy expense of the transport. The export consists chiefly of meat, pease, flax, and goods from the Baltimore, and the New England ports; all of which are packed in barrels, with bread-panchards, ashes, soap, candles, some timber, and sugar. The imports are manufactured goods from the United States and England, the produce of the West Indies, cotton, and some articles of smaller importance.

Education.—The principal educational establishments which are found in many places west of the Appalachian Mountains, are most numerous and extensive in the state of Ohio. They generally consist of circular embankments, walls, and mounds many feet high; the several pupils in the several districts. The state has 600 academies. The number of pupils is between 15,000 and 20,000. The ruins of the Academy of Steubenville were made of stone from 12 to 15 feet high and 4 or 5 feet thick, which encloses upwards of 100 acres. The ruins of the Academy of Piqua are of still greater extent, and others occur near Hamilton on the Ohio, but have been left in ruins since the commencement of the Ohio and Erie Canal. They are overgrown with trees as large as those of ancient forests, and hence it is supposed that they must have been erected at a very remote period. The Indians who, until lately, were in possession of the country, are of large increase, and they have utilized these fortifications, and hence it is conjectured that they were erected by a nation which has disappeared from the face of the earth.

History and Constitution.—This country was first visited by the French from Canada in the seventeenth century, the route of the lakes Ontario and Erie, but no settlements were formed, until the British from Pennsylvania and Virginia began to claim it, and by force to prevent this by establishing small forts from Presque Lake Erie to the Ohio along the channel of the Allegheny river. This however was considered by the British government more as an encroachment than an improvement, which the French lost Canada and were expelled by North America. Some settlements which were attempted after that time were destroyed by the Indian tribes the possession of the country. Ohio was ceded at the conclusion of the war made by Virginia in the year 1757, and in 1778, after the agreement, as being a part of the country, including the states of Michigan, Indiana, and Illinois, was formed into a territory. The first permanent settlement was formed at Marietta about 1783, but its progress, as well as that of some others farther west, was slow, until the Indians, in 1786, ceded a great portion of the state to the general government by the treaty of Greenville. The population now increased so rapidly, that in 1790 attained the amount required for being constituted a state. On the 29th November the present constitution was adopted, and took effect in the following year. The legislative body consists of a Senate and a House of Representatives, both elected by the white inhabitants who are twenty-one years of age and have resided in the state twelve months next preceding the election. The number of the House of Representatives is 100, and of the senators 36; they are chosen annually. The rule of the senators cannot be less than one-third nor more than one-half of that of the representatives. They are chosen by the people, and the senators are chosen for the term of two years, and the representatives for one year. The supreme executive power is vested in a governor chosen for the term of two years by the same persons as elect the legislative body. Ohio sends two members to the Senate and 14 members to the House of Representatives.
OIL 415  OIL

(Darby's View of the United States; Pitkin's Statistical View of the Commerce of the United States; American Almanac for 1830.)

ÖHLMULLER, DANIEL JOSEPH, a German architect, who held the office of Civiltown-inspector at Munich, was born at Bamberg in 1791. After studying under Karl Fiecher (died 1820), to whom many others were indebted for their professional education, he visited both Italy and Sicily, where he spent four years in examining the principal edifices, until he was summoned to the side of Donizetti, and on the 28th November in that year. Taken altogether, the Dome is one of the noblest and most successful works in that style which has been produced in modern times in Germany, and is remarkable for the splendour of its lofty windows, filled with coloured glass. This oil is more pure and has a smell less disagreeable than common whale oil, and it burns much more brilliantly in lamps. According to Dr. Ure, spermascet oil consists of—

Hydrogen  11·86
Carbon  78·00
Oxygen  10·20

The Vegetable Expressed Oils vary in their general properties; most of them are fluid at usual temperatures; such as olive oil and linseed, and these possess but a slight degree of colour; whereas cocoa-nut oil and palm oil are at common temperatures soft butyrous solids, and the last mentioned is of a reddish yellow colour. The first vegetable expressed oil of which we shall describe is one which is well known and most extensively employed, viz.,

Olive Oil.—[Olea Europaea]—The colour is yellowish, the odour and taste but slight. Its specific gravity is about 0·916, and consequently it floats on water, not being soluble with it. At 25° Fahr., yielding small particles of stearin, which sink in the remaining fluid portion of oil; at 28° Fahr. it dissipates 28 per cent. of stearin, the remainder being olein or elein. When heated to between 300° and 600° Fahr., it suffers decomposition; by exposure to the air it becomes rancid, especially when originally of inferior quality or adulterated with poppy oil. It dissolves in alcohol and water, but in very small quantity. The more solid portion of vegetable oils is by some chemists called margin, the term stearin being used only for the solid portion of animal oils.

This oil consists of olein and stearin or margin, in the proportions of about 72 of the former and 28 of the latter according to Saussaye these are composed of—

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<tr>
<th>Olein</th>
<th>Stearin</th>
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<tr>
<td>Carbon 76·02</td>
<td>82·70</td>
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<tr>
<td>Hydrogen 11·54</td>
<td>11·23</td>
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<tr>
<td>Oxygen 12·068</td>
<td>6·302</td>
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<tr>
<td>Azote 0·333</td>
<td>0·396</td>
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The azote is so small in quantity, that if even actually present, it can scarcely be deemed more than accidental; and neglecting it, we shall find by calculation that taking the olein and stearin in the proportions stated, the ultimate analysis of olive oil will be nearly

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<tr>
<td>Carbon</td>
<td>78</td>
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<td>Hydrogen</td>
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<td>Oxygen</td>
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</tbody>
</table>

Linseed Oil is expressed from the seeds of the common flax, Linum usitatissimum. When no heat is employed in the pressing, it is more viscid and has a greenish-yellow colour; it is then called in commerce oil of straw, or unpressed linseed oil. Its mean specific gravity is about 0·930. Its smell and taste are stronger and more disagreeable than those of olive oil. Linseed yields about 22 per cent. of oil; at 4° Fahr. it becomes paler coloured, but does not deposit an olein in cold water; 2 days at 5° lower it becomes a solid yellow mass; it has however been stated that when exposed for several days to a cold of 4° Fahr. it becomes solid. Linseed oil is soluble in 5 parts of alcohol when boiling, and 40 parts when cold; by ether it is much more readily taken up, 1·6 part dissolving 1 of the oil. When this oil has been kept long in a bottle partly filled, it becomes thick, and much more soluble in alcohol.

According to Saussaye, linseed oil is composed of—

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>76·02</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>11·351</td>
</tr>
<tr>
<td>Oxygen</td>
<td>12·635</td>
</tr>
</tbody>
</table>

When this oil is kept in a vessel imperfectly closed, in a cellar, a white fatty sediment and a brown powder are deposited. The former contains the stearin of the oil mixed with impurity insoluble in ether, which dissolves the stearin, and this crystallizes by the spontaneous evaporation of that titer. The stearin is soluble in 10 parts of cold alcohol, in 40 of boiling anhydrous alcohol, and in 50 parts of cold and 20 of boiling ether; it has with great difficulty converted into soap. Linseed oil is largely employed in oil-painting and in varnish-making.

Almond Oil is another important fat oil, obtained, like the preceding, by pressure, and indifferently from sweet almonds
or bitter. It is of a light yellowish colour, much more fluid than olive or linseed oil; its odour and taste are very slight. Its specific gravity is about 0.917. When exposed to the air, it becomes colourless and rancid; it is soluble in 25 parts of cold and 6 of boiling alcohol, and ether dissolves it readily. According to Braconnot, when cooled to 15° it yields 24 parts of stearin, which melts at 43° Fahr., and 76 of olein, which does not solidify by exposure to the lowest temperatures; these statements have not however been confirmed by other chemists, and it has even been asserted that it contains no stearin whatever. This oil, according to Sausseur, consists of—

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>77.403</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>11.481</td>
</tr>
<tr>
<td>Oxygen</td>
<td>10.028</td>
</tr>
<tr>
<td>Azote</td>
<td>100</td>
</tr>
</tbody>
</table>

It is employed sometimes in soap-making, and also in medicine.

_Caster Oil_ is the expressed oil of the seeds of the _Ricinus communis_, a biennial plant, cultivated both in the old and new continent. When exposed without the assistance of heat, it is transparent and nearly colourless, or has only a slight yellowish tint; that which is quite colourless appears to have been rendered so by artificial means, and is much diminished in efficacy. It is very considerably viscid, and becomes solid when exposed to about 0° Fahr. Its specific gravity is about 0.966. It has scarcely any taste or smell. When exposed to heat, it becomes aromatic and rancid. It differs from most other fixed oils in being entirely miscible with alcohol and ether in all proportions, and it is employed only in medicine as a cathartic. By the action of heat and re-agents it is converted into numerous new compounds, we have heard from Busby and Lecan, in the 15th vol. of the ‘Journal de Pharmacie.’

The analysis of Sausseur gives its composition as—

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>74.178</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>11.034</td>
</tr>
<tr>
<td>Oxygen</td>
<td>14.758</td>
</tr>
</tbody>
</table>

Having now stated the properties and composition of some of the best known and most useful of the fluid fixed oils, we shall briefly describe two which are solid at the usual temperature.

_Cocoa-Nut Oil._—This oil is obtained by pressure from the kernels of the cocoa-nut, the fruit of the _Cocos nucifera_. It is white, but a slight pleasant smell, and an agreeable taste is rather agreeable; its consistence is about the same, or perhaps not quite so hard, than that of oil, and yet it contains some oil mixed with the stearin or margarin. Its specific gravity is about 0.910; it melts at 122° Fahr., and of late years it has been employed in soap-making and margarin. It is also used advantageously as a substitute for wax in the manufacture of candles. It is remarkable for the little change which it undergoes by keeping; years are required to render it rancid.

_Fig Oil._—This oil is of the consistence of butter, and of an orange-yellow colour; its smell is agreeable. It melts at about 103° Fahr. It becomes rancid very readily, and at the same time loses its colour. It is sparingly soluble in anhydrous alcohol, to which it imparts a yellow colour, whoso the solution in ether is of a red colour. It is stated to be composed of—

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stearin or Margarin</td>
<td>31</td>
</tr>
<tr>
<td>Olein</td>
<td>69</td>
</tr>
</tbody>
</table>

_We shall now mention the properties and composition of some of the Volatile or Essential Oils_: these are fluid at the usual temperature, and with few exceptions are obtained by distillation. Essential oils are distinguished principally by the following properties from the expressed oils:—Usually they are more perfectly fluid, more combustible, have an aromatic or fragrant odour, and an acrid taste; they are volatile per se without decomposition, and may be distilled with water, although their boiling-point is much higher. They combine with alcohol and ether in all proportions, but combine with water only in sufficient quantity to impart their odour to it. These oils evaporate without leaving any stain on paper, and they do not saponify with the alkalis. In some instances, as those in which the volatile

oils exist in great abundance, they are obtained by pressure, without the application of heat; this is the case with the oil of lemons, oranges, and bergamot; in general however they are procurable only by distillation, and this effect is sometimes brought about by stirring the oil with water, when the oil and water are volatilized and condensed together. Like the fixed oils, they appear to contain a harder and a softer principle; the former has been called _stearopten_, the latter _eupropen_.

The first volatile oil we shall notice is _one which is extensively employed_, the Oil of Turpentine. To obtain this oil, turpentine, a well known viscid substance, which exudes from various species of the genus _Pinus_, is put into a still with water; the oil rises in vapour, and is condensed with the water, while rutaceae, as it is usually termed, remains behind. This, it has been stated, consists of two resins, to which the names of _pen_ and _silic acid_ have been given by Unverdorben.

This oil when pure is limpid and colourless, and it possesses a peculiar, strong, and to most persons a disagreeable smell. Its specific gravity is about 0.863; the density of its vapour at 313°, compared with that of air, is 4.83 to 1. The oil is but slightly soluble in alcohol which contains water; 100 parts of alcohol, of 0.84 sp. gr., dissolve 13.3 parts at 17° Fahr. Like other essential oils, it is extremely inflammable, and burns with much flame, and with the formation of water and carbonic acid, as is also the case with the fixed oils. Its boiling point is about 314°. It is composed of—

| Equivalents of Carbon | 60 or 65:24 |
| Equivalents of Hydrogen | 4 or 11:26 |

It is largely employed in the arts as a solvent in varnish-making and in house-painting.

Of the volatile disagreeable fixed oils and several other bodies with great facility. Thus iodine, camphor, and resins are soluble in it to a considerable extent. It is stated that it is capable of dissolving 163 times its volume of hydrochloric acid gas, provided it be kept cool; the resulting compound is a white crystallized substance, resembling camphor, and has been called _artificial camphor_.

Great difference of opinion prevails among chemists as to the precise nature of oil of turpentine and the mode in which its elements are combined.

Oil of _Lemons_, commonly called _Essence of Lemons_, is one of the few essential oils obtained by pressure and not by distillation. It is extracted from the rind of the lemons, and is imported from the south of Europe. Its properties are, that it is limpid, and has a light yellow colour; it has an odour resembling that of lemon, and like other essential oils, its taste is acrid. Its specific gravity is about 0.847; it remains fluid even when cooled down to 4° Fahr. It dissolves in absolute alcohol in all proportions, but is less soluble in alcohol of boiling point.

According to Dumas it is composed of—

| Equivalents of Carbon | 88:45 |
| Equivalents of Hydrogen | 11:46 |

It is therefore probably composed of exactly the same proportion of its elements as oil of turpentine, and like this, it combines and forms a peculiar compound with hydrochloric acid gas. It is used in perfumery.

Cinnamal oils are the oils of several _Cinnamum_ species, and are taken as types of those which consist entirely of carbon and hydrogen, the greater number of them contain oxygen also. Among these are the oils of lavender, peppermint, rosemary, spearmint, and marjoram; the properties of this last only we shall deem it requisite in this particular to notice.

Oil of _Marjoram._—This oil is obtained from _Oregano vulgare_, and, according to Dr. Kane, has a specific gravity of 0.999: it generally contains a large but not a constant quantity of stearopten, and when purified from this by repeated distillation, Dr. Kane found that its specific gravity is 0.8673, and its boiling-point was 322° Fahr.

This yielded, by Dr. Kane's analysis, such proportions of its elements as showed that it was constituted of, according to his equivalent numbers—

Fifty equivalents of Carbon 307 or 84:48
Forty equivalents of Hydrogen 40 or 11:27
One equivalent of Oxygen 8 or 2:25

583 or 109.
The volatile oils which have been alluded to or described are all lighter than water, but there are some which are heavier than this fluid, and consequently sink in it; such are the oils of cinnamon, cloves, and cassia.

There are certain volatile oils which are poisonous, on account of the hydrocyanic acid which they contain; the most remarkable of these is the oil of bitter almonds; this however ceases to be poisonous when deprived of the hydrocyanic acid. Similar or analogous oils are obtained by distilling other substances with water, as laurel leaves, peaches, lemon, etc.

As an instance of an oil produced by the agency of heat upon animal matter, we shall briefly mention what has long been known by the name of Dippel's oil, from having been first obtained by a person of that name. When animal matter, such as the bones or horns of animals, is subjected to destructive distillation in retorts, there comes over with the other products an oily substance which has a very disagreeable odour and a dark colour; by repeated distillation the liquor is got rid of, but the former remains, although the oil becomes lighter and limpid. It was formerly much used in medicine, but is not now employed.

The last example which we shall give is that of the formation of an oleaginous body by direct chemical action: it is the oil of Pignons, or of the Pine Nuts. When alcohol is distilled with twice its weight of sulphuric acid, an oleaginous compound is procured, which, after treatment with potash and exposure to the air, has the following properties: it is a yellow fluid, of a penetrating aroma, and on copious distillation, is divided into two parts, white and black; the white or inner part is the one which is variously stated from 1:50 to 1:135, and there is some doubt whether its composition is not also variable, dependent upon the different quantities of a peculiar carburetted hydrogen which it is apt to contain.

A very interesting fact it contains Sulphuric acid 38° or nearly one equivalent 40 Carbon 53.7 or nearly nine equivalents 54 Hydrogen 8.3 or nearly nine equivalents 9

100 103

The analysis of Serulaors differs however considerably from this.

OILS. VEGETABLE, are divided by chemists into fixed and volatile, and the former into such as are drying, fatty, and solid. They are employed for the preparation of vegetable oils, in consequence of which they are obtained, their abundance, and the probability of their being used as substrates for the whale and sperm oils, which are becoming every day dearer from their comparative deficiency. Considerable prejudice is entertained against vegetable oils, in consequence in some measure of their inferiority, and also because they are apt to undergo decomposition, but likewise because it is difficult to separate the other vegetable principles from the oil, and the chemical means adopted for their purification are generally of a destructive nature. But that many of these are very valuable is evident from several being imported in large quantities from the countries where they are produced, and hence forming important articles of commerce. In many countries they are solely employed for all the purposes for which animal oil is alone thought applicable in England. The high price of the latter has however induced dealers to mix with them a portion of the despised oils of the vegetable kingdom. This subject appears interesting, and sufficiently important to induce chemists to ascertain the properties of each kind of vegetable oil, as fitted either for burning in lamps for soap or candle making, and their numbers are sufficiently great to render it highly probable that some will be found eligible for all these purposes. They are employed in the manufacture of the plants which yield them, as the cocoa-nut, palm, olive, and croton oils. Linseed and hempseed are both imported in large quantities from the north of Europe, and the former, of late years, also from India, whence also sesamin or "oil seed is also imported. It is fitted to a square measure, and is used by the French in addition to the oil of the French departments, both in amount and density of population, but far inferior in both respects to the English counties with which we have compared it. Beaumais, the capital, is on the river Marne, and is at a distance of 39 miles from Paris, by a direct line north by west, or 41 miles by the road through St. Denis and Beaumont-sur-Oise.

This department has no mountains nor any lofty hills; the surface consists of gentle undulations. The highest ground extends across the department from east to west,

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not very far within the northern boundary, and separates the basin of the Seine from that of the Somme. That part of the department which is comprised in the former basin is by far the larger, and is watered by the Oise and its tributaries. The Oise enters the department near the north-eastern boundary on Noyon, and flows in a tolerably direct line of 55 miles south-west through the department, passing Noyon, Compiegne, Pont-Sainte-Maxence, and Creil, between which last town and Beaumont it quits this department to enter the adjacent one of Seine et Oise by a stretch through the flat district that part of its course which is in this department. The Aisne, which is also navigable, enters the department on the east side, and has a tolerably direct course of 12 miles west by north into the Oise above Compiegne. Below the junction of the Aisne the river receives the Bulbes, the Brêche, and the Terrien, or Thérain, on the right bank and the Autone; or Authonne, the Nonette, and the Thève, on the left. These are all small: the Terrien, the longest of them, has a course of about 45 miles south-west, through the greater part of the department, and is navigable for a few miles; and the Epée, a feeder of the Seine, forms in one part the southern boundary. Some of the feeders of the Somme have their sources within its limits, but they are unimportant.

The official statement of the inland navigation of the department is as follows:—Oise, 65 miles; Aisne, 13; Ourcq, 6 miles; total river navigation, 84 miles. Canal parallel to the Oise, 17 miles; Canal of the Ourcq, 5 miles: total of canal navigation, 106 miles.

There are several pools and marshes. The greater part of the department is occupied by the chalk formation which surrounds the Paris basin: the southern part is occupied by the strata of the suprachalk group. There are no metallic ores; but marble, freestone for building, some of it of superior quality, sandstone for paving, millstones, gypsum, lignite (the ashes of which are used for manure), and potters' earth, are dug. The remains of the flint and of flint are employed in digging peat. There are several mineral springs, for the most part chalky, but none of much repute. There was, in 1834, only one iron-work in the department, having two forges for the production of wrought iron.

The department is traversed by twelve Routes Royales, or government roads, having an aggregate length of 363 miles, namely, 341 in good repair, 12 out of repair, and 12 unfinished. The principal road is that which leads from Paris to Abbeville to Arras, and from Arras to Calais. The road from Paris to Peronne and Cambry passes through Senlis and Pont-Sainte-Maxence; that from Paris to Amiens passes through Chantilly, Creil, Clermont, St. Just-en-Chaussée, and Breteuil; that from Paris to Laon, passes in the east single, that from Paris to Dieppe crosses the north-west single angle of the department. Roads lead from Beauvais, from Clermont and Compiegne, to Breteuil, and to Gournay (Seaine-Infrérieure); from Senlis, along the valley of the Oise, by Compiegne and Noyon, to La Fère and St. Quentin (Aisne); with a branch from Noyon to Ham (Somme); and from Compiegne, on the one hand, to Montdidier and Amiens, and on the other, to Soissons. The Routes Départementales, or departmental roads, have an aggregate length of 911 miles, 159 miles out of repair, and 646 in repair, and 246 unfinished. The by-roads and paths have an aggregate length of more than 3000 miles. (Official Returns, 1st January, 1837.)

The air is temperate, and for the most part healthy: the exceptions occur in the neighbourhood of the various pools and marshes. The soil varies in fertility: more than 950,000 acres, constituting about two-thirds of the department, are under the plough. The produce in corn is very great, being nearly as much again as the average produce of the department. For garden produce, it is chiefly cultivated, the preponderance is yet greater, and in rye and maïs (or mixed corn), and in oats, the growth of which is all but equal to that of wheat, greater still. Barley and potatoes are cultivated, but not very extensively. Some hemp and flax are grown; some linen is grown at all. Wheat and oats are exported in considerable quantity, principally to Paris and Rouen. The quantity of grass-land is about 70,000 acres; and there are 35,000 to 40,000 acres of heath or other open grazing-land. The artificial grasses most cultivated are trefoil and lucerne. There are only about 6000 acres of vineyards, and the wine grows, with little exception, of very inferior quality. The wines of Bourgogne and Champagne are chiefly consumed, and gardens occupy 35,000 to 40,000 acres; a considerable quantity of cider is made. The woodlands comprehend about 200,000 acres. The principal forests are those of Compiegne (about 35,000 acres), Chantilly, Ermenonville, and Le Lys. The number of horses in the department is nearly double the average number in the other departments; they are for the most part brought from the department of Pas-de-Calais, where they are bred. The number of meat cattle is not equal to that of the department, in the proportion of 12 to 1. The原文 furnishes the markets of Paris with some of their most delicate veal. The number of sheep is great, and the produce of wool considerable; the breed has been much improved by crossing with the English (Leicester and Southdown), and Merino breeds. A portion of the wool is employed by the manufacturers of Beauvais and the valley of the Oise. A considerable quantity of pork and poultry is fattened for the supply of Paris, and bees are commonly kept. The larger game, stag, roe, and wild hares, are found in the woods, and the rivers abound with fish.

The department is divided into four arrondissements, as follows:

<table>
<thead>
<tr>
<th>Arrondissement</th>
<th>Popn.</th>
<th>Communes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beauvais</td>
<td>749</td>
<td>131,385</td>
</tr>
<tr>
<td>Clermont</td>
<td>595</td>
<td>93,476</td>
</tr>
<tr>
<td>Compiegne</td>
<td>294</td>
<td>97,812</td>
</tr>
<tr>
<td>Senlis</td>
<td>519</td>
<td>79,080</td>
</tr>
</tbody>
</table>

The number of censuses, or districts, each under a justice of the peace, is thirty-five.

The arrondissement of Beauvais includes the towns of Beauvais (population 1831, 18,887; in 1836, 18,022) [Beauvais], Gisors, and Songes, on the Territoire; Marcel, and Milly, on the Petite Terroir; Grandvilliers, or Gramvillers (population 1811, Formerie, La Boisse, Chaumont, and Meru. Gisors is on an eminence. It is now an easy ascent to the present road, but was an important point in the duchy of Normandie, and was exposed to frequent assaults. It suffered much in the wars of the English and Franks, and in the religious wars of the sixteenth century. The fortifications of the town, which had been dismantled by the revolution, were wholly rebuilt in the shape of a strong town, with thick walls, and the townsman carry on some trade in hares and cattle. It has two yearly fairs. Songes is pleasantly situated at the foot of a hill, and consists of well-built stone houses. Spectacles and looking glasses are manufactured here. The trade is agricultural, and the district is divided into a series of villages. In the neighbourhood is the town of Aisy, in the department of Oise, with a large church and market-place; it is built of brick and in a pleasant situation. The townsman manufactures leather, and trade in cattle there are five yearly fairs. At the village of Aisy, in the neigbourhood of the town of Orly, there is a spout of water, called the Source de Gisors. Grandvilliers is on the road from Paris to Abbeville. It is a wide streets converging in a large market-place; the inhabitants manufacture woolen cloth, serge, hussars, toys, etc. on soap. Hosiery and serge are also made in the neighbourhood. Present in the town is a large cattle market. It is divided into a series of streets, and in corn, brandy, cider, coal, etc. There are 50,000 acres of town and garden. In the neighbourhood is a castle, the seat of Grandvilliers, which is occupied by the duc d'Orleans. The town is well built of brick and in a pleasant situation.
the village of Niviller, near Beauvais, about the same number are engaged in spinning hemp, in combing and spinning wool, and weaving stockings. At the village of Hanvole, near Songeons, a great quantity of serge is made; and at Savignies and La Chapelle-aux-pots, near Beauvais, are several manufactories of woollen stuffs.

In the arrondissement of Clermont are—Clermont (pop. in 1831, 2594 town; 2715 whole commune; in 1836, 3235 commune) and Bulles, on the Bresche or St. Just en Chausée, near the head of the Arro, a small tributary of the Bresche, on the Mont-Merle, 1817, was carried on the Terroin; Breteuil (pop. 2244 town, 2284 whole commune) on the Noye, a feeder of the Somme; and Crevecœur. Clermont, distinguished from other places of the same name as Clermont-Oise or Clermont-en-Beauvais, was at first probably a border castle erected as a barrier against the Normans. In the tenth century it became the capital of a county, which, in the thirteenth century, was conferred by St. Louis on his son Robert, ancestor of the house of Bourbon. The town is pleasantly situated on the banks of the river, on which command admirals and extensive and beautiful prospect, and is crowned by an ancient castle. At the foot of the castle wall is an agreeable public walk. The principal manufactures of the town are cotton yarn, printed and other calicoes, and woollen goods; paper, earthenware, and leather, which are carried on in the town and neighbourhood about 1200 workmen. The washing of the wool and the dyeing and finishing of the cloth are carried on in the town. There is a good weekly market, also a fair, which has, from the long and marked decay of a Gaulish town (the Bratuspantium of Caesar, Bell. Gal., lib. ii., c. 13), the traces of which, called by the people around Bratuspantium, have remained till the present time. A number of vases, coins or medals, and other antiquities have been dug up. The townsmen make shoes for the troops and for the hospitals of Paris; worsted stockings, serge, shawls, and other woollen goods; paper, earthenware, and leather; they trade in corn, cattle, and hides. There is a good number of ground-breaking and sawmill workers in the town. Crevecœur is a magnificent castle of brick, with a walled park and gardens. The inhabitants, who exceed 2000, are engaged in the manufacture of woollen stuffs; and trade in corn, trefoil and lucerne seed, cattle, and horses. The walls of the city are one of the walls of the commune.

Coupigny (pop. in 1831, 8879; in 1836, 8895) [COMPIGNIE] and Noyon (pop. 5535 town, 5946 whole commune), on or near the Oise; and Pier-fond, about 7 miles south-east of Compigny. Noyon is mentioned in the 'Itinerary of Antoninus and the 'Neasam' as the chief seat of the Baccataris. In the fifth century the bishop's see was transferred thither from Augusta Veromandurum, now St. Quentin. Pepin le Bref began and Charlemagne (who was crowned here) finished the erection of the cathedral; and at Noyon, Henry IV. It was dismantled by Louis XIII. and has been rebuilt after the plans of Perron and Le Sueur. It has been taken the next year by Henri IV. The town is well laid out and well built, at the foot and on the slope of a hill, and is traversed by the two branches of the little river Vose, which flows into the Oise a short distance from the town. The names given in the four suburbs are: Noyon, from the north; Juvincourt, from the south; Le Songeons, from the east; and Pier-fond, from the west. The townsmen manufacture linens, muslins, hosiery, and leather; and trade in corn, hosiery, hides, and vegetable ashes. Pier-fond or Pierre-font had a strong castle, which was obstinately defended by the leaguers against the troops of the Duke of Anjou; and in 1301, the townsmen of Pierfond and Pierre-font gave the name of Pierfond, and now forms one of the most picturesque ruins in the country.

In the arrondissement of Senlis are—Senlis (pop. in 1831, 5068; in 1836, 5016) [SENELI] and Nanteuil-le-Hardouin, on the Nonette; Pont-Saint-Maxence (pop. 2453 town, and 2575 whole commune) and Creil, on the Oise; Merlou or Mello on the Terroin; Chambly, on the brook Mêru, which flows into the Oise; Crepy or Crepsy (pop. 2242 town), and Acy or Assy. Nanteuil has the ruins of an ancient castle, the residence of the Capets, and the celebrated dukes of Guise, and of an ancient priory. The townsmen (about 1300 or 1400 in number) carry on some manufactures, and trade in corn and cattle. Pont-Saint-Maxence or Maixence is in a pleasant situation, and is remarkable for a handsome bridge of three arches, erected in 1777, in the place of a more ancient structure. The townsmen have been built by the Romans. Each corner of this bridge is adorned with an obelisk, and the piers are composed each of four columns arranged two on each side, with an interval of five feet between the columns. The inhabitants are engaged in tanning leather, and they trade in flax, and the quantity of which is sent to Paris, wine, and cattle. It has a good weekly market, and a fair every month. In the neighbourhood are the ruins of the ancient and rich abbey of Montigny. Creil has the ruins of an ancient castle built by Charles V., and of an ancient abbey. The town was pilgrimmed by the Huguenots in 1567, and subsequently taken by the League. The principal manufacture of the town is wool, cloth of various sorts, woollen goods, silk, ceramics, porcelain, pottery, and glass, which gives employment in and about the town to 900 workmen. Some printed cottons are manufactured, and trade is carried on in coal, corn, flour, and cattle. In the district round the town manufactures are carried on at the quarries, where the workmen live in habitations excavated in the rock. Merlou or Mello has an ancient castle on a picturesque and commanding eminence, at the foot of which lies the little well-built town of 400 or 500 inhabitants, which was afterwards the residence of the Normans. Some printed cottons are manufactured, and trade is carried on in coal, corn, flour, and cattle. In the district round the town manufactures are carried on at the quarries, where the workmen live in habitations excavated in the rock. Crepy or Crepsy was the capital of the county (afterwards duchy) of Valois, and in the feudal ages was a place of great strength. It was taken by the English, who are said to have destroyed fifteen hundred houses. The strong castle of the counts of Valois was also taken and destroyed. The town was retaken by the French in 1533. In 1544 a treaty was concluded at Crépy between François I. and the emperor Charles V. In 1586 the town was taken by the League and retaken by Henri IV. The town is surrounded by a public walk planted with trees, and is entered by five gates. The columns of the choir of the parish church are remarkable for their lightness and beauty. Part of the town and of the old castle is standing. The manufactures are lace, cotton goods, leather, and the environs, home-spun linen; trade is carried on in corn, wood, cattle, horses, thread, and woven goods. There are two yearly fairs. In this arrondissement are the villages of Cocles, where the manufacture of porcelain, and the princes of Condé, destroyed in a great part during the Revolution; and of Ermeneville, where Rousseau died (A.D. 1778) and was buried. His tomb remains, but the body was removed to Paris, A.D. 1794. The town, which is given accurately, is, unless otherwise stated, from the census of 1831, and is that of the whole commune; when only an approximation is given, the authority is Dulaure's Histoire des Environn's de Paris, Paris, 1822-28. The manufacture of toys is carried on in the villages between Meru and Beauvais: that of optical glasses and mirrors around Songeons; bricks, tiles, crucibles, sugar-refiners' pots, and other pottery, between Beauvais and Songeons and around Songeons; cotton yarn at various places, and woollen goods and calicoes at various places. There are many print-shops and the manufacture of various kinds is carried on with great activity: porcelain, earthenware, glass, woollen, linen, and cotton yarn, and goods, lace (at Chantilly), silk and cotton buttons, brass and iron wire, and paper are made; stereotyping and other printing, bleaching, card-making, sheet-copper and iron works, and flour-mills are in active operation. The industry of this district owes much to the duke of La Rochefoucauld. The morality of the humbler classes has been improved by the
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O K H R I D A, a town of Albania, in European Turkey, situated on the north-eastern shore of a considerable lake, which takes its name from the town. According to the map of Albania prefixed to Hughes's "Travels" (1810, ed. 1830), Ohrid is in 41° 51' E. long.

Ohriska is on or near the site of the ancient Lychnidos (Αλκυνιόδος, or perhaps Λίκνιαδος, Strabo). This town of Lychnidos gave antiquity its name to the lake which was called Ἀλκυνιών ὕππατος or Λίκνιαδος. The town lies at the foot of an eminence, its most important characters are its castle, in which the Turkish governor of the surrounding province resides. The population of the town is estimated at about 6000, chiefly of Bulgarian descent. Salt and sulphur are procured from mines near the town. A Greek church is situated in the town.

The lake of Ohrida extends about 18 miles from north-east to north-west, and is 6 or 8 miles across in its widest part. It is in the valley watered by the Black Drin, which flows through the lake in the direction of its length. There are several villages round it. It abounds with fish, and the fishery is actively carried on.

The paushalick or district of Ohrida is not very large, but in the uncertain state of Turkish geography we do not attempt to give its boundaries a large quantity. The district is mountainous, and is said to be well wooded. The lake is watered by the Black Drin and the Scomb. It is tolerably productive in corn, maize, rice, tobacco, cotton, hemp, fruit, and wine. Cattle and bees are reared, and game is tolerably abundant. The district is almost inhabited, though the tribes are distinguished by their courage and fertility, and are reputed to make the best soldiers among the Albanians.

O L A C A Č E K. This name applies to a small and rare studied natural order of Exogenous plants, chiefly found in Russia and the extreme north of America. The order contains the following species: Actaea, Rumex, and Silvanectes. The genus is small, inferior calyx, often becoming enlarged around the ripe fruit, a polyacteved ovary, corolla a small number of hypogynous stamens, partly fertile and partly barren, a one-aelled ovary, with pendulous ovules, indescent frst, and a small embryo amnion.

After this, the place is totally uninhabited, and the village near the Autonne, in the territory of the Vadiasses.

There are the traces of a Roman camp between Beauvais and Clermont.

Before the Revolution the department was included in the districts of Lille de France proper, Oise, Noyon, and Soissons, in the military government of Lille de France, and in the districts of Santerre and Amienais in Picardy.

O K A, River. [Russa.]

O K H T S K, a commercial town, situated on the northern shore of the Pacific Ocean, which separates the peninsula of Kamchatka from the continent. It is in 59° 20' N. lat. and 145° 18' E. long. The town was formerly built on a flat sandy neck of land, about two miles in width, and washed on one side by the river Ochota, and on the other by the sea. It is said that the place is entirely unhealthy on account of the fogs in which it was frequently enveloped, and also exposed to inundations during southern and south-eastern gales, the town was removed a few years ago about three miles further up the bay. The town now built on the site of the former town is about thirteen feet above high-water mark, on the right bank of the Ochota. The town is small, consisting only of a few hundred houses, and the inhabitants are estimated not to exceed 2000. But as it is the only place by which the inhabitants of the interior have a communication with the exterior, the peninsula of Kamchatka and the Russian dominions in North America is maintained, it has a considerable commerce, though, owing to the sterility of the adjacent country, it has no article of exportation except a small quantity of fur. The fur is brought by the native Americans employed in the trade, who reside in the town of Irkutsk, build vessels here from time to time, but at a great expense, as the timber must be brought down from the woods, which are more than fifty miles distant. The furs brought from America are conveyed by land through Yakutsk to Irkutsk, and thence to Khiatcha, to be exchanged for articles of Chinese production. The harbour is very bad. It is formed by the river Ochota, which, meeting the sea by a rapid defile, is bounded on its marine side by a cliff, which obstructs the entrance to the basin, and offers three steps of nine feet of water on it. Besides this, it is only accessible from June to September, being blocked up with ice and snow the remainder of the year. The Russian government has accordingly resolved to select another place on the coast of the Pacific, which shall be easily accessible to a merchant marine, and will enable the inhabitants to build there a new town. According to the most recent information, the mouth of the river Uda (54° N. lat. and 136° E. long.) offers considerable advantages, having a fine harbour sheltered by the Shantar Islands.

The "Letters of Bellinghausen on Geographical and Astronomical Expedition to the Northern Parts of Russia; Langsdorf's Voyages and Travels in various Parts of the World; Saryshev's Voyages to Siberia, &c.; Erman's Reise um die Erde durch Nord Amer und die beiden Ozeane."
of improving the nomenclature, has proposed for these variable strata the title of the Devonian System. If the evidence of the correspondence of geological age, between the calcareous and slaty strata of South Devon and the red-sandstones of Herefordshire, should become strong enough to command the assent of geologists, the settlement of an appropriate name will not be without difficulty, especially if we remember that the continental types of stratification ought to be included in a good general appellation.

Quartzose and arenaceous grits, along with the barbed sandstones of Herefordshire, Monmouthshire (especially the limestones of the Cluny and Wye districts), and the Cotswolds, are found in the old red-sandstone the following kinds of rocks, the formation, or system, where they are most conspicuous, viz. in the districts of Monmouthshire, Breconshire, and Herefordshire, and the borders of the Cumbrian, Lammermuir, and Grampian mountains, we find in the old red-sandstone the names of the districts:—

Conglomerates.—These are usually composed of a basis of red-sandstone, or red argillaceous matter, in which multitudes of large and small pebbles are imbedded. The fragments thus enclosed are usually such as may be supposed to have been derived from the neighbouring slaty rocks of older date, and they are often collected in great abundance in the lower parts of actual valleys. This is observed especially near Kirkby Lonsdale, Sedbergh, and the foot of Ullswater. Among the fragments of grauwecke, quartz pebbles are rarely found in the district of Mephisto, in the lines, and other products of mineral veins. The conglomerate rocks of Herefordshire, Monmouthshire, &c. contain little else than fragments of quartz, making what is called a plump-sitting-stone.

Sandstones.—In most situations these are laminated parallel to the stratification, and in Monmouthshire, Herefordshire, &c. they have interpersed micas, and yield very good flagstone.

Angular Beds.—These abound in the English and Welsh series, and by their red, white, and greenish colours, often exhibited in alternate bands and spots, resemble very nearly some varieties of the upper or new red-sandstone series.

Calcareous Beds.—The limestones of this series of rocks are usually associated with the argillaceous strata, and are very peculiar in character. They lie somewhat irregularly interstratified with the clays, and partake of the same colours, reddish, whitish, greenish, the different lines being so frequently confused with each other as to form a sort of stone the aspect of a breccia, or conglomerate, and to justify its local name of 'gooseberry stone.' It is in places a nearly pure carbonate of lime in massive beds, but it is very seldom employed for any useful purpose. We have seen polished fragments which might serve for a large bay window.

The best general series of these rocks known is that unfolded by Mr. Murchison's examination of the country along the border of South Wales. That author presents us with the following three groups in a descending order:

1. The first consists of a ferruginous limestone, and conglomerates occupy a thickness of about 200 feet, and then pass down into chocolate-brown sandstones, mottled marls, &c.

2. Cornstone formation, including marly clays and the peculiar limestone above described. Fragments of fossil faun, especially of the Cephalaspides, occur not uncommonly.

3. Tilestone. Nearest in position to the Silurian rocks, these laminated sandstones resemble them somewhat both in organic remains and mineral aspect, being however more arid and often interserted in part with a micaceous sheet which is less productive of fossils. On the surface they make a red soil, while the upper Silurians yield a grey soil.

Mr. Murchison estimates the total thickness of the old red-sandstone system at not less than 5000 or 10,000 feet. (Silurian System, p. 184.)

OLDCASTLE, SIR JOHN, called 'the good,' the first martyr and the first author among the nobility of England, was born in the fourteenth century, in the reign of Edward III. He married the lady of the name of Lauder, and obtained the title. He gained military distinction in the French wars under Henry IV. and V., and was a domestic and a favoured attendant of the latter. Lord Cobham was a man of extensive talents, qualified for the cabinet or the field, ready wit in conversation, and of great learning. He examined the writings of Wickliffe as a philosopher, and in the course of his study became a convert to the doctrines of that reformer. He collected and transcribed the works of Wickliffe, maintained preachers of that persuasion, and became a leader of the reformers. Lord Cobham being summoned to appear before the archbishop of Canterbury, refused, was excommunicated, and sent to the Tower, from which he escaped into Wales. The clergy got up a report of a pretended conspiracy of the Lollards, headed by Lord Cobham, whereby a bill of attainder was passed against him, a prize of 1000 marks set upon his head, and exemption from taxes was promised to any person who should secure him. At the expiration of four years he was taken, and without much form of trial executed in the most barbarous manner. He was hanged in chains on a gallows in St. Giles's Fields, London, and after a kind unmerited death, by him, which he was roasted to death, in December, 1417. He wrote 'Twelve Conclusions addressed to the Parliament of England;' he also edited the works of Wickliffe, and was the author of several instructive sermons.

OLDENBURG, or HOLSTEIN-OLDENBURG, a grand-duchy in the north of Germany, consists of three distinct portions. 1. The Duchy of Oldenburg Proper, so called, which lies between 42° 34' and 53° 44' N. lat. and 10° 49' and 12° 42' E. long. contains 930 square miles. It is bounded on the north by the German Ocean; on the east by the Hanoverian province of Bremen, the territory of the city of Bremen, and the Hanoverian province of Hoya; on the south by Onabrück; and on the west by the Hanoverian province of Oldenburg. 2. The Principality of Lubeck, which is surrounded by the duchy of Holstein, contains 180 square miles. One large portion is compact and unbroken; the remainder is scattered on the banks of the Trave, the Weser, and the Hunte. 3. The Principality of Birkenfeld, which is on the left side of the River Weser, contains 140 square miles; it is bounded on the north-west and south by the Prussian province of the Lower Rhine, on the north-east by Meissenberg, and on the south-east by the principality of Lichtenberg. The area of the whole is 2440 square miles.

Surface of the Country; Soil; Climate.—The Duchy of Oldenburg Proper is a part of the great plain of Northern Germany, without mountains or hills, and without forests. The country and moors are traversed by numerous streams in a manner that the latter, as Hassel observes, are like oases in the desert. The coasts are low, and protected against the inroads of the sea, partly by dunes, and partly by dykes, like those in Holland. The mouths of the Weser and the Jade are lined with dykes. The soil of the old coast district is tolerably firm, but there is rich marsh land on the banks of the Weser and at the mouth of the Jade. The principal rivers are the Weser (which however only forms the boundary between Oldenburg and the province of Bremen), the Jade, which, when it falls into the country, is divided into the Hunte, the Hase, and the Leda. There are no large lakes; the most considerable, the Zwischenahner Meer, is 6 miles in circumference, and its banks are surrounded by picturesque well-wooded eminences. The climate, like that of the northern German provinces, is very changeable yet on the whole it is not unhealthy. The natural productions are corn of all kinds, flax, hemp, some hops, culinary vegetables, timber for building, and wood for fuel. There are the usual domestic animals, especially very good horses, and equal to the finest. The produce of fish, flax, and bees. There are no metals; but there is indifferent turf, pipe and brick clay, and quarry stone.

The Principality of Lubeck is flat and resembles Oldenburg in its soil and climate, but contains some beautiful lakes, especially those of Pluen and Eutin. The Schwartau and the Trave are the chief rivers. The Principality of Birkenfeld lies on the side of the mountain-range called the Hochwald, branches of which traverse it, and contain many valleys between them that are dry and almost sterile. The climate is rather cold near the mountains and on the eminences, but in the valleys it is mild and healthy. The natural productions are corn, flax, hemp, timber, fruit, and wine. The mineral kingdom affords lead, iron, coal, slate, sago, Jasper, and several other objects of useful title.

Trade and Commerce.—The chief occupations of the inhabitants are agriculture and the breeding of cattle. The farmers on the moors and marshes follow each a different system of cultivation; yet none of these systems can be called good. There is scarcely anything that can be considered as a village, the farm-houses lying quite isolated in the centre of the farms. There are no great manufactures in the grand-duchy, but the people make considerable quantities of coarse linen, worsted stockings, and thread, which, though in general the work of the leisure hours of the country-people, are a source of
great profit. Oldenburg is extremely well situated for commerce, but the trade is chiefly a coasting trade, which is carried on in vessels with one or two masts, from twenty to forty tons burden, calculated for navigating the shallow waters (called Altmeere) between the sand-banks in the German Ocean, on the coasts of North Holland, Groningen, Friesland, and Germany, to the river Eider. The exports are the natural productions of the country, including 6600 horses and from 8000 to 10,000 oxen annually, and considerable quantities of linen, leavened hides, rags, &c., principally to Holland and the Hanseatic cities. The revenue is about 150,000l. sterling, and there is no public debt. Of the inhabitants, 234,772 are Low Germans and 980 Jews. The established religion is the Lutheran; there were, in 1853, 157,093 Lutherans, 70,880 Roman Catholics, 2314 Calvinists, and 980 Jews.

Education.—With respect to education, Oldenburg is rather backward. The rarity of villages renders it difficult to establish schools. There is no university, and till lately no great push has been made in science. The universities founded here were, in 1561, the university of Jever in 1570, and 1580 at Oldenburg. There are likewise a few schools, a military school, a gymnasium for school-masters, and 2 superior Burgher schools.

Government, &c.—As a member of the German Confederation, in conjunction with Anhalt and Schwarzburg, Oldenburg has the fifteenth place, or vote, second only to that of its own in the full council. The contingent to the army of the Confederation is 2177 men. Since 1834 Oldenburg furnishes the contingent of artillery for the Hanseatic cities, which in return furnish the contingent of cavalry for Oldenburg. The army is a moral and spiritual, and hitherto without an assembly of estates. The government is hereditary in the male line.

History.—The ancient house of Oldenburg is one of the most illustrious in Europe; the empire of Russia, the kingdoms of Denmark, and the late royal family of Sweden are descended from it. Oldenburg is the original seat of the family. Christian I. founded the town of Oldenburg in 1135, and assumed the title of count. One of his descendants, Dietrich, succeeded him as the Dietrich, and became the duchy of Deldenhorst, and with his second the duchies of Schleswig and Holstein. After Dietrich's death in 1440, his eldest son, who had for his share Schleswig and Holstein, became in 1448 king of Denmark, by the title of Christian II., the heir to the Danish crown. The other share of the country of Sweden, two sons, John, who succeeded him in the northern kingdom, and Frederic I., who had Schleswig and Holstein, and who, after the deposition of his nephew Christian II., the son of John, was made king of Denmark and Norway. His eldest son, Frederic Augustus, inherited in 1538, the two kingdoms of Holstein and Denmark, and received in exchange Oldenburg and Deldenhorst, which he immediately transferred to his cousin Frederic Augustus, of the younger branch of Holstein Gottorp, which has given sovereigns to Sweden, Russia, and Oldenburg. Dietrich's youngest son Gerard the Warlike inherited Oldenburg and Deldenhorst, but the male line of the house of Oldenburg terminated with the Danish crown, or to the house of Holstein, descended from Dietrich's eldest son. In 1773 the grand-duke Paul of Russia, who was descended from the elder branch of the house of Holstein Gorttorp, made a convention with Denmark relative to Holstein, and was made count of Holstein to Denmark, and received in exchange Oldenburg and Deldenhorst, which he immediately transferred to his cousin Frederic Augustus, of the younger branch of Holstein Gorttorp. This convention was sanctioned by the emperor Joseph II., who gave to the two counties the rank of a duchy, and as the house of Holstein Gorttorp had ever since 1617 given bishops to the see of Lübeck, he assigned it to that family as an hereditary principality. Frederic, the first duke, was succeeded in 1782 by his son Peter Frederic, who was being absent in foreign parts, the government was assumed by his cousin Peter Frederic Ludwig, the bishop of Lübeck, who in 1808 joined the Rhenish confederation. But Napoleon, by a decree of 14 December, 1815, incorporated the duchy with the French empire, and offered the duke as an indemnity for the territory of Erfurt, which he refused, saying, 'I desire only subjects whom I know and love, and who love me.' After the fall of Napoleon, the duke recovered his own dominions; the congress of Vienna also assigned to him the principality of Birkenfeld; he obtained from Russia the lordship of Jever, and likewise obtained the sovereignty over the lordships of Varel and Kniphausen, which belong to Count Bentinck.

Danzier, the capital, in 53° 29' N. lat. and 4° 11' E. long, is a well built town on the navigable river Hunte; the ramparts have been converted into public walls and gardens. The population is 7800, including that of the two suburbs. The palace is a very handsome building with a fine park, or what the Romans call an around garden. There are some tanneries, distilleries, and soap manufactories in the town. The public institutions are—the gymnasium, the seminary for school-masters, the military school, a library of 45,000 volumes, an observatory, and a remarkable collection of rare books and manuscripts. Of Varel, on a canal which joins the Jahde, forms a harbour which merchantmen can enter at high-water, has 3000 inhabitants. Jever, in a fertile country on a navigable canal, has a good trade and 3600 inhabitants. Eutin, which is a very pretty town, has 10,000 inhabitants. On a bank of a lake, has a palace of the grand-duke with a beautiful park, and 2700 inhabitants.

(Halem, Geschichte des Grossherzogthums Oldenburg, 3 vols., 1780-1784; Trumpp, Kurzgefasste Oldenburger Chilken, 1811; Kohl, Historische Beschreibung des Herzogthums Oldenburg, &c., 2 vols. 1824.)
making some allowance to their secretary, observing that for his own part he was ashamed that Oldenburg should have been permitted to devote so much time and pains to the work of instruction that was given free of charge. A much more important foundation is that of Thomas Henshaw, who, above mentioned, who, in 1687, after making sundry bequests, the chief of which was an annuity of 300l. a year to his widow during life, directed that the sum of 20,000l. should be applied out of his estate in founding a blue-coat school. The蓝-coat school was afterwards established at Manchester, and that 40,000l., together with the residue of his estate, should be appropriated to instituting and supporting a blue-coat school either at Manchester or Oldham, as the trustees should deem advisable. The further provision of these sums was expended in the purchase of ground or in the erection of buildings, not doubting that either public or private benevolence would supply both the one and the other. The testator died in 1810, and fifteen years later the site thus bequests was shown to be well grounded. In the meantime a bill was filed in the Court of Chancery, praying that the bequests in favour of the Blue-Coat School and Blind Asylum might be declared void, and the widow and next of kin declared entitled to the residue of the estate. The case having been referred, the property was vested in the name of the accountant-general, and in February, 1826, accumulated to 96,320l. 6d., three per cent. consols, inclusive of 11,000l. stock for securing the annuity to the widow, &c., and the revenue arising from the management of the funds of the school. The blind asylum has been recently opened at Manchester. [Manchester, xiv., p. 374, wherein read 'Henshaw,' instead of 'Kershaw.']

The ground for the blue-coat school was given in 1825 by the Marquis of Camden. Radcliffe Hall and Oldham School are parts of Oldham Edge. The cost of erecting the school was principally defrayed by a subscription among the inhabitants of Oldham amounting to between 3000l. and 6000l., and the building itself was completed in 1825-4 under the direction of Mr. J. B. B. Driver, a first-class architect, of considerable length, ornamented with several pinnacles, and comprising among its numerous apartments a spacious lofty school-room, dining-rooms, and an elegant entrance-hall.

Since 1834 two other schools have been established at Oldham with the assistance of grants from the lords of the Treasury, made at the recommendation of the National and British and Foreign School Societies. One of these can accommodate 1390 children, and the other 1100. The establishment of these two schools is a matter of great importance.


OLDYS, WILLIAM, an industrious and accurate bibliographer, and a useful biographical writer, was born in the year 1687. He was the natural son of Dr. Oldys, chancellor of Lincoln and advocate of the Admiralty Court. His father became solicitor, was a man of some substance, and saved a manuscript of Sir Walter Raleigh's History of the World, 1738, to the situation of Norroy king-at-arms. He died on the 15th of April, 1761, aged seventy-four. His dissolution habits continued through life, and he died poor.

He was the author of the following works:—The British Bibliographer, exhibiting a view of all unprinted and valuable Books in all Sciences, as well as in MS. as in Print," London, 1737, 8vo., anonymous. This work, though long neglected, is now esteemed for its accuracy and usefulness. 'A Life of Sir Walter Raleigh,' prefixed to Raleigh's 'History of the World,' 1738, folio. A translation of Camden's 'Britannia,' 2 vols. 4to., has been ascribed to him, almost with certainty. 'The Harleian Miscellany, or a Collection of scarce, curious, and entertaining Pamphlets and Tracts,' London, 1729, 8vo., is a collection of the 'Biographia Britannica' the lives distinguished by the signature G, among which are those of T. and E. Alleyen, Eugene Aram, Caxton, Sir Geo. Etheredge, &c. Besides the above works, he published a few other on bibliographical and miscellaneous subjects, and some memoirs and notes on subjects of bibliography, together with a copy of
On OLE.

Langbaine's Lives, filled with remarks, are preserved in the British Museum.

OLEA EUROPEA, differs from most trees, except the sweet bay (Laurus nobilis), some species of cornus, and a very few others, in yielding a fixed oil from the peper; the seed being the source of fixed oils in most plants. The oil which is expressed from the ripe fruit immediately after being collected is most esteemed, and called virgin oil, oil of hyssopinaceae. That which is most highly prized comes from Nice and Genoa. When the oil is extracted by a stronger pressure, or by the aid of heat, or after the olives, having been collected into heaps, have remained till a kind of fermentation has occurred, it is the common olive oil, the properties of which vary in proportion as the fermentation has been of long or short duration. An oil of still inferior quality is obtained, when the husk of the olive, after the former treatment, is boiled in water. This kind is employed solely for the preparation of soap.

Virgin oil is of a very pale yellow or yellowish-green colour, more limpid when fine than any other fixed oil; inodorous; when fresh, but emitting a very peculiar odour when old; taste purely oily but by age becoming slightly rancid. Common olive-oil is a dark greenish or brownish-yellow colour, and an odour and taste more or less subradical. Its specific gravity is greater than the other.

Olive-oil, on account of its high price, is frequently adulterated with poppy or rape oil. The former may be easily detected, if present in the proportion of only one per cent., as it retards the solidification of the oil. When a mixture, consisting of nine parts of nitric and three parts of hypouritic acid, is added to a hundred parts of the suspected oil, the presence of metals may be detected by sulphuric acid. For various means of applying these and other tests, see Thomson's Organic Chemistry, *Vegetable Substances,* p. 435.

Olive-oil is used in medicine as an emollient, and to form cerates and plasters. It is also used in the manufacture of soap, the finest kind is much employed with various articles of food, particularly in the countries where it is produced.

As this oil becomes viscid more slowly than any other vegetable oil, it is used, after being purified, by watch-makers.

OLEA CEAS, so named after the subject of the last article, are Exogenous plants, with a superior 2-celled ovary, a subvalvate corolla, two stamens, and a fruit with pendulous albuminous seeds. In the artificial collections of natural orders to be found in books, these plants are usually designated as Jasminaceae, with which they have been even combined. It is however probable that they have really as much affinity with some of the monopetalous dicarps as with that order.

The Evergreen Philophtes of many forms, the Privet, or Ligustrum, and the Pringe-tree, or Chionanthus; all which correspond in habit and in sensible properties, which latter are very generally bitter and febrifugal. The bark of the two has been extensively used by the French instead of Cascaines, and the young fruits of the common lilac form an infusion scarcely inferior to gentian.

The most anomalous genus of the order is the Ash, which forms immense forests in parts of Asia, and in the division called Orinus has the petals present, but separate to the base. It is however, in all essential circumstances, the same in structure as the more regular genera; and its relations of the order have been investigated by the . The Olive and the Lilac will both live when grafted upon it. It is from the Orinus, or Flowering Ash, that the buttersweet purgative substance called manna is secreted.

OLEARIUS, ADAM, whose name was OELSCHLAGEL, was a German civil servant, who resided at Constantinople for the preparation of soap.

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OLEON, or ELAIN, was first observed by Chevreul that expressed oils and different kinds of fat usually contain two oils of different degrees of fusibility, or in other words, two different fatty substances; so that on cooling any expressed oil, one part of it became solid, while another portion retained its fluidity. In consequence of this observation he concluded that all expressed oils are similarly constituted; to the less fusible oil he gave the name of stearin (from erin, suet), and the more fusible he termed olein (from olea, oil), which was afterwards changed to olein.

Several methods have been proposed for separating these two substances. When olive oil, for example, is exposed to a low temperature, a portion of it becomes solid, and the remainder retains its fluid form; the former is stearin, or margarin, and the latter olein; these are separated by absorbing the liquid part by blotting-paper, and pressing the olein into the paper. After some time the latter portion becomes solid, and the former fluid, and renders the olein greasy. The olein which the paper has absorbed is then to be separated from it by boiling it in water, on which the olein floats, and the paper sinks.

Olein has scarcely any taste or smell when procured from oils which possess these properties only in a slight degree. Its specific gravity is 0.98, it solidifies at 27° Fahr., and crystallizes in needles. In water it is quite insoluble, but alcohol takes it up largely when boiling; by the alkali potash and soda it is readily saponified, and during this operation it is separated by a number of the elements of the olein and their action on the elements of water; these changes occur without the evolution of any gaseous matter.

On account of the very low temperature at which olein congeals, it is well adapted for lubricating the wheels of watches, and its value in this respect is enhanced by its not readily becoming rancid by the action of the air.

According to Saussure, the olein of olive oil consists of:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>76.03</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>11.54</td>
</tr>
<tr>
<td>Oxygen</td>
<td>12.07</td>
</tr>
</tbody>
</table>

**OLEON** is a product obtained by distilling oleic acid mixed with lime; the residue is carbonate of lime, while from the commencement of the operation a fluid substance is obtained, which deposits mere traces of solid matter. This liquid is not acid, but the difficulty of obtaining oleic acid in a pure state has hitherto prevented its being determined in its exact relation to oleic acid, or accurately determining its composition.

OLE'RON, or OLERON, a town in France, capital of an arrondissement in the department of Basses Pyrénées. It is situated on the river Oloron, which is passed by the road through Poitiers, Bordeaux, Baza, and Pau.

Oleron is an ancient town, and appears in the 'Itinerary' of Antoninus under the name of Iurre, and in the 'Notitia Provinciae Galliae' as Uriorum. From the commencement of the sixth century a lighthouse existed here, which was suppressed at the Revolution.

In the middle ages the town was ruined by the Saracens and the Northmen, but restored by the care of the viscounts of Bearn. It consists now of three parts of the upper town (ville haute), and the lower town (ville basse), forming Oleron properly so called, chiefly between the Gave d'Aspe and the Gave d'Ossou, or Ossau, which, by their junction, form the Gave d'Oloron; and Saute Marie, a separate commune on the left bank of the Gave d'Aspe. A portion of the lower town is on the right bank of the Gave d'Ossou. The population of the commune of Oleron, in 1831, was 6438 (of whom 5850 were in the town itself); that of Sainte Marie, 3371 (of whom 2718 were in the town): giving an aggregate of 9819. The crime of murder in the year 1836, was 6620. The upper town is the oldest part of Oleron, and consists of a few lanes, an ancient church, and a little old market-house on the summit of a hill. The lower town, which contains the greater part of the population, is the most ancient, and the present church stands. The trade of the place is carried on here. Sainte Marie, united to Oleron by a lofty bridge, is the best laid out and best-built quarter of the whole town; it contains the principal central and episcopal palace.

The chief manufactures of the town are of paper, stockings, the woolen caps worn by the Bearnais peasantry, and box and horn combs for the Spaniards: the manufacture of coarse woolen cloths has much decayed. Considerable trade was formerly carried on in Spanish bullion, but it is

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now trifing. Wool from the surrounding country, sheepskins, skins, horses, flt timber for masts of ships of war, are sold. Hams, called Bayonne hams and salted greece, are prepared here and all over the department. There are many fairs. There are some judicial or fact government offices in the town.

The arrondissement of Oleron comprehends an area of 712 square miles, and includes 81 communes. It is divided into five judicial districts, each under a justice of the peace. The population, in 1831, was 74,552; in 1836 it was 76,312.

OLE'ON. ISLE OF. [CHARENTE INFIRMIERE.]

OLE'ON, LAWS OF. The laws, or constitutions, or judicial decisions, are a collection of antient municipal customs in written in Old French, and bearing the name of Oleron for several centuries, because tradition points to the island so called [CHARENTE INFIRMIERE] as the place of their original promulgation. An ancient copy of these laws is in the 'Black Book,' now in the Bodleian Library: but they are not there called the Laws of Oleron, nor is there any reference in the laws themselves, or in the book which contains them, to their origin or birth. There are no antient laws which can pretend to the histories of the 'Lugemens de la Mer:' in Cleirae's edition of the 'Us et Coutumes de la Mer' they are given, without any description of the book or place from whence they were extracted as a part of 'Rondeau de l'Oleron.' They are generally referred to by French writers on maritime law as 'Jugemens d'Oleron.' The copies of these laws however published by Cleirae, as well as those appended to the 'Coutumier de Noirmandie,' differ materially from each other, and also from the 'Black Book' of the Admiralty, though many of the articles are almost verbally the same in all. They relate to the rights and duties of ship-owners, mariners, maritime contracts, and extend to the whole body of maritime law. They are chiefly remarkable at the present day from the circumstance that they were for several centuries adopted by all the nations of Europe as the foundation of their maritime laws.

It is commonly stated by English law writers that the laws of Oleron were compiled and published by Richard I. in the island of Oleron, on his return from the Holy Land. This statement, which is in substance given by Coke, Selden, Hale, Pynne, Blackstone, Reeve, and several other writers on maritime law, is not confirmed by any instance of the readiness with which historical errors are propagated when one writer makes his assertions respecting facts from the statements of another without thought or examination. There is scarcely any fact in history more erroneous than this. It is said that Richard I., in returning from the Holy Land, was shipwrecked in the Adriatic, near Venice, and was immediately taken by Leopold, duke of Austria, and detained a prisoner in Germany (Rymer's Fadler, vol. i., p. 70); and there is good evidence that the famous Walter de Hoveden, who wrote the Life of Richard, gives a different name to the whole island of Oleron, and speaks of it as being under the dominion of France, and not of England, so that he can have had no knowledge of these laws. But even if Richard I. were the true author of them, which is very improbable, it is not as certain that the另有 name for the island of Oleron, which is written in French language—whence the name of Richard I. all laws of royal ordinance, both in England, were settled, and promulgated in Latin; 2, that if they had been promulgated in England before the time of Bracton, Britton, and Pety, they must have been mentioned by those authors; and 3, that the original historians of the reign of Richard I. have much more extensively dealt on the merit of his legislation.

Mr. Luders conjectures, in the excellent tract above alluded to, that these laws did not proceed from any royal ordinance; but that the men of Oleron, who had corporate life, in the time of 'Boniface de Oleron,' in the reign of John (Rymer's Fadler, vol. i., pp. 1, 111, 112), and had very considerable trade as early as the twelfth century, may have collected adjudged cases upon the laws of the sea, for regulating their own maritime affairs; that hence the laws of Oleron derived their name; and being received and respected in England and France in the course of the fourteenth century, became known and partially adopted in other nations of Europe. To the copies of these laws appended to the 'Coutumier de Poitou,' 'Couvrier du Maine,' and also to the 'Rondeau de l'Oleron,' an attention paid by the seal of the isle of Oleron is attached, with the date of 1266. This seal is inventorized as having been once in the treasury of the Court of Exchequer. See Rymer's Fadler, Kalendar and Inventories of the Exchequer, vol. p. 106.

OLIBANUM. This name, of frequent occurrence in comparative modern works, does not appear to have been known to antient commerce or Materia Medica. It appears to have been derived from the Greek λσβον, the Arabic ألبان, which is applied, as well as the Greek ἱθυρα, to the Arabian gum, which is described in the Arabian authors as inferius, to the name Koondr, to which, in the Latin translations, Olibanum is given as a synonymum, as well as the Arabic Lamba. As the Arabian author includes a description of the bark, manna, gum of Thus, or frankincense; in the same way as we find, in Dioscorides, the description of Libanum, or Thus, followed by the part of the other parts we have mentioned, indicating, as an excellent instance of the Koondr, the Arabian gum, under Koondr, refers to the Αθυρα of Dioscorides. From the former we may infer a name to be given to the Indian kind of the substance. Mr. Colbecke ascertained (Anatiae Res, ix. and xi.) that Koondr was applied by the Arabs in India to a fragrant resin still used there as an incense, and that this resin is obtained from the tree which has been already described under the name Boswellia thurifera. The name Koondr appears derived from the Sanscrit कून्द्र, which is applied to torch of the Hindus. (Pl. Ind. ii. p. 344.) The resin of this tree is an extremely valuable article of commerce, and has been exported in large quantities from the island of Ceylon, and so the other species of the genus, which extend as far north as 36° in the Seward's or sub-Himalayan range of hills.

Dr. Royle mentions that he has collected on the island of this species, in the latter locality, some very clear, pure, and fragrant resin, which burns rapidly with a bright light, diffusing a pleasant odour. Both species yield the fragrant resin, which is employed as incense in India, and which must be included in the product of the resin obtained from the tree which has been already described under the name of Boswellia thurifera. From the affinity in vegetation between parts of Arabia, Persia, and India, it is not improbable that the genus Boswellia may extend to Arabia, and there produce the kind known as Araban Olibanum, the tree yielding what is called the true resin, and which is obtained from the largest trees, has been exported to most of the Arabian exports, it is difficult to know whether they are the produce of that country, or have been first obtained by commerce and then re-exported, whence in earlier times Arabia obtained celebrity for producing so much of the fragrant and medicinal resin, which we now know to have been obtained from Africa and India.

Dr. Royle further states that in Bengal the name koon is applied to Benzoa, though in Northern India applicable only to Koondr, the produce of Boswellia thurifera, and also that in Persian works, Benzoa is distinguished by
OLIYA is a considerable and well-built town, with 1500 inhabitants, situated in a beautiful country about a mile from the Baltic, in the government of Danzig. It was formerly a Cistercian abbey of great celebrity. The abbey church is a fine building and contains much that is worthy of the notice of travelers. There are 26 altars, of which 25 are in the central nave. The building was restored in 1861 with the aid of the proceeds of the sale of the abbey property. The church has two towers, the tallest of which is 250 feet high. The entrance to the building is through a portico supported by four columns. Inside, the church is spacious and well-lighted. The ceilings are high and the arched windows let in a great deal of light. The church is known for its fine acoustics and is frequently used for concerts and other musical events. The interior is richly decorated with stained glass windows, frescoes, and sculptures. The church was founded in the 12th century and has undergone several renovations and expansions over the years. It is now a popular tourist attraction.
the mean annual temperature is from 62° to 58°, where the
mean temperature of the coldest month is not below from
41° to 42°, and that of the whole summer from 71° to 73°
Great cold is injurious to it, as that of 1709 was to the
olive-trees of France. M. Bové states that olive
thrive in Egypt, and Delilé that it contributes to the
riches of the Fayoum, which is nearly in the latitude of Cairo.
It is evident that it is capable of bearing a greater degree of
heat, as is probable indeed from its being a native of Asia,
has been cultivated in early times in Syria and Palestine
by the antient Hebrews, and known to them by the name of assi, and
to the Arabs by that of saxiun. It is said to have been
introduced by the Phænicians into Marseille.

Olive oil is largely produced in Spain, France, and Italy,
tho' there is much reason to doubt that it was the last-named country into England.
Thus, of 2,791,557 gallons of olive oil imported
in 1830, 2,043,237 were from Italy; 639,468 from
Spain, 52,004 from Malta, partly at second-hand
21,467 from Turkey, 11,300 from the Ionian Islands, and about
30,000 from other parts of the
world. The quality is much
suited to the olive-oil, and the finest
imported is from the olive-oil
of Apulia, Calabria, and
largely exported from Gallipoli, on the east coast
of the Gulf of Taranto, whence it is commonly known by
the name of Gallipoli oil. The duty levied is 6s. 8d.
(two and a half per
cent., or one of the
parishes.

Olive oil is the lightest of the fixed oils, and is largely used
in the south of Europe as an article of diet, and likewise in
cookery and for salads in the north. It is also used in many
of the arts where fine oil is required, as to make the best kinds of
oils, or in distillation, to point medals, and various
purposes. In a vegetable
printing paper in the volume, ' Vegetable Substances employed as Materials of Manufactures,' it is stated that Gallipoli oil
is purified to the highest degree by merely keeping it in
cisterns hollowed out of the rock, on which the town is built.
See also M'Coolloch's 'Com. Dict.;' and for the culture of the
olive, the works of Bernard, Amoreux, and Rosier.

OLIVE-TREE. [Olnea Europica.]

OLIVELLA, Mr. Swainson's name for a genus, or rather subgenus, separated by him from Olea, and characterized as having
two plaits on the columns.

OLIVER, ISAAC, an English painter, was born in
the year 1556. He studied first under Hilliard, and received
further instruction from Frederick Zuccheri. His chief
eminent works are painting the most distinguished personages of his time, and many
very fine portraits by him are preserved in the collections of
the English nobility and gentry. Among them there are
some portraits of himself, of Queen Elizabeth, Mary queen of
Scots, etc., in the collection of the late Ben Jonson, others, which are admirably finished, and fully justify
the high reputation which he enjoyed. A whole-length portrait
of Sir Philip Sydney is especially admired. It is no mean
testimony to his merit that Rubens and Van Dyck painted
King Charles I. for a minute by this master. He was a
good and correct designer, his touch was neat and delicate,
and his works are still as highly esteemed as they were by
his contemporaries. Though he generally worked in
miniature, he frequently painted on a larger size, and sometimes
attended to subjects in large masses. He occasionally
worked in oil as well as in water-colours, but with little success. His drawings, many of which are
copies from Parmegiano, are beautifully finished and highly praised. The celebrated vaulted hall in Queen Caroline's Closet at Kensington Palace, there is a fine drawing by Oliver, the
subject of which is the Entombment of our Saviour, and
another from Raphael's Murder of the Innocents. He
died in 1617, at the age of 61.

OLIVER, the son and disciple of Isaac, was
born in 1601, and though so young at the time of his
father's death, had so well profited by his instruction and
example, that he attained a degree of perfection in mini-
ature portrait painting indisputably superior to his father or to
any of his contemporaries, especially as he did not con-
fine his subjects to a head only. He likewise painted his-
torical pictures, nineteen of which were in the collection
of Charles I. and James II. Seven of these are still pre-
served in Queen Caroline's Closet at Kensington.

OLIVES, MOUNT OF. [Jerusalem.]

OLIVET, JOSEPH THOULIER D', was born at Sa-
lins, the 1st of April, 1682, of respectable parents. Having been
admitted among the Jesuits, he was sent to the col-
lege at Reims in 1704, and afterwards to Lysy in
Paris he became acquainted with some of the most eminent
literary men of the time, and took an active part in the
controversy, which then existed in the French Academy, as
the comparative merits of the antient and modern writers. He
warmly supported the claims of the last, and, in a private study, in opposition to the opinions of Fontenelle, La Mothe, and Perrault, Olivet left
the society of the Jesuits about the year 1714, much to their
regret, who offered him the place of instructor to the princes
of Asturias, whom he declined to accept.

In 1723, Olivet elected a member of the French Academy.
He passed the remainder of his life at Paris, engaged
in various literary works, and in occasional squabbles with his associates in the Academy. He died at the advan-
taged age of 86, on the 8th of October, 1768. The number of
Olivet's publications is so large, as the early productions
are not extant.

In his principal work of Olivet is his edition of Ciceron,
which was originally published at Paris in 1748, in 12, in 3
volumes 4to. This edition, which is of little external value,
contains many useful notes, chiefly extracted from preceding
commentators. It was reprinted at Geneva in 1758, a
volumes 4to., and was very improved in 1751, in 3
volumes 4to. Olivet's translations of Ciceron are some of
the best that have been published, though, like most of the
French translations, they are deficient in accuracy. Of
these the principal are, the 'De Naturæ Deorum,' 1754, 8vo.,
which was translated by M. de Voltaire for the French
Academy, and printed in 1753, in 8vo.; the 'De Officiis'
translated by M. de Voltaire for the French Academy, and
published originally in 1751, a 2 volumes 4to., and
extensively used in the French schools. The only
other work of Olivet worthy of notice is his continuation
of Pelisson's 'History of the French Academy,' (Histoire
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OLGO

the country, nothing was effected towards the object of the mission. Olivier and his companion visited Kom, Isaphan, and other places, after which they retraced their steps to Bagdad in November, 1736. From Bagdad they returned to Syria, and thence by Cyprus and Asia Minor to Constantinople, on which they proceeded to Russia, and from thence to Patras and Corfu, where they embarked on board a French frigate for Ancona, at which place they arrived in September, 1739. After his return to France Olivier prepared a narrative of his travels, which was published in 3 vols. 4to, with an atlas, in 1740.

The style is plain and unassumingly gaudy; the observations are generally sensible and correct, and the author has added a sketch of the history of Persia from the usurpation of Nadir Shah to the end of the eighteenth century, when Fez Ali Khan took possession of the country. The text is of considerable information concerning Mesopotamia, the Koords, and Bagdad, as well as regarding the Greek islands.

Olivier continued his studies of natural history, and published the 'Histoire Naturelle des Coléoptères', 6 vols. 4to, Paris, 1808, and also 'Dictionnaire de L'Histoire Naturelle des Insectes', in which he was assisted by others, in 9 vols. 4to. He died at Lyon in 1814.

OLLMÜTZ is one of the six circles of the Austrian margraviate of Moravia: it has an area of 1900 square miles, with a population of 1,000,000 inhabitants.

Ollmütz, formerly the capital of the margrave, but now only the chief town of the circle, is a well-built and strongly fortified town, in 49° 33' N. lat. and 17° 4' E. long. It is situated between two arms of the river Moray, by which the city is surrounded. The houses are large and lofty, but gloomy, and most of them are raised on square buttresses, with piazzas. Ollmütz has four gates, five suburbs, and several remarkable public buildings and institutions of various kinds. There are thirteen churches, including the Jesuit church, an ancient and noble pile of building. A magnificent edifice, which was formerly a college of the Jesuits, is now converted into barracks. The University library is likewise a fine structure, formerly a seminary of the Jesuits; and its collection of books, which are of great value, donated to the town by princes and noble persons, consists of above 50,000 volumes. The town hall is a handsome edifice, detached from any other building, with a tower 250 feet high, in which is a very remarkable and once celebrated clock, which however has long been out of repair. The palace of the archbishop is a very extensive building, magnificently fitted up, but the pretate generally resides at Kremers. The University, founded in 1581, was transferred to Brünn in 1784, but re-established in 1827: it consists of four faculties, and has between 600 and 700 students. Among the institutions of learning is an university, an academy of sciences, an academy of fine arts, a seminary, a school for military cadets, a great infirmary, lying-in-hospital and orphan asylum, and the central board for the management of the affairs of widows and orphans in all the Austrian hereditary dominions. The population of the city in 1836 was 13,558, but the 'Conversations Lexicon,' 1836, makes it amount to 19,000.

The town has considerable manufactories of woolen cloths, numerous tanneries, and a brisk trade, an important article of which is the sale of cattle from Russia and Moldavia. The bishopric of Ollmütz, which is very ancient, was erected into an archbishopric in 1777, and is one of the richest benefices in Austria. In 1758 Ollmütz was besieged by Frederick II., but bravely defended by the garrison, assisted by the inhabitants, which submitted to its relief, came to the rescue. The queen Maria Theresa testified her satisfaction by conferring on the town various rewards and honours.

(Stein, Georg. Lexicon; Hassel, Handbuch; Cannabich, Geographie: Oesterreichische National Encyclopaedie.)

OLMEDO is a town in the kingdom of Leon in Spain, situated in 41° 18' N. lat. and in 4° 37' W. long. It is in the province of Valladolid, and within the bishopric of Avila, and is the chief town of the small partido, or district, which bears its name. It lies near the course of the river Eresma, which is the boundary between Castile and León, and has 9 leagues from Valladolid, 5 from Medina del Campo, 11 from Segovia, and 22 from Madrid.

The town is situated on an eminence on the eastern side of an extensive plain, fertile in wheat, rice, barley, wine, and fruits, and affording pasture to large flocks of sheep, and a few horses and horned cattle. At the base of the hill flows the Eresma, and at the distance of a league to the west the plain is intersected by the Adaja, both tributaries of the Duero. Olmedo was formerly strongly fortified, and still preserves an enclosure of walls. The population, according to Miño, was in 1825 about 2150. It contains six parish churches, but seven convents (two of monks and five of nuns, all suppressed in 1833), two hospitals, a public granary, and a posting establishment. A brandy distillery, a saw-mill, and two tile-works, are the only manufactures. Its annual contribution to the royal treasury is 32,400 reales, or 17,400 florins.

Olmedo is celebrated in Spanish history as the seat of several cortes, and for two sanguinary battles fought in its neighbourhood, the first in 1445, in which Juan II. of Castile obtained a victory over the Aragonese; the second, fought in 1467, between Enrico IV. of Castile and the rebels headed by his brother the Infante Don Alonso. (Miño: Laborde; Mariana.)

OLNEY. [Buckinghamshire.]

OLONETZ is an extensive government of Great Russia, considered by Stein at 66° 43' N., lat. and 24° 34' and 49° 2° E. long. According to Schubert the area is 79,520 square miles, including the great lake Ladoga, and the population 359,800. It is bounded on the north and north-east by Archangel, on the south-west by Wologda, on the south by Novgorod, on the west by Petersburg, and on the west by Lake Ladoga and Finland.

Place of the Country; Soil; Climate.—As this government extends to the polar circle, its northern half has entirely the character of the high north lands of the southern part, while the nature of the temperate zone. The Scandinavian mountains enter the country from the north-west, surround the two great lakes Ladoga and Onega, and run to the borders of Petersburg and Novgorod. This range is low and gently rising; more than from 300 to 420 above the general level, yet they are covered during a great part of the year with snow. The country at their base is in general low, wet, and swampy. The summits are clothed with forests of fir and other trees, and are studded with large boulders and rocks. The beds of the rivers are covered with bog-iron ore abounds, with deep sand and clay. The surface may be said to be equally divided between mountains and forests, open tracts, morasses, and water.

This government contains 1938 lakes, and 835 rivers and rivulets: the two greatest lakes, Ladoga and Onega: of the former, only the larger portion is in this government, the remainder being in Petersburg and Archangel; but we have included, after Hassel, the whole area of 6100 square miles in the area of this government, the lake being entirely in the circle of Ladoga, and its mean length is 130 miles, and the breadth from 70 to 80 miles. Like Lake Ladoga, it contains numerous islands, most of which are covered with forests. Among the largest of the other lakes are Speg, Len, Kax, Iem, Sarno, and Nuk. The principal rivers are the Svir, which runs from Lake Onega into Lake Ladoga, and though full of boulders, is navigable; the Oloska, the Ruskola, and the Janez, all which run into Lake Ladoga. The following rivers run into Lake Onega,—the Wytygra, the Wode, the Lisch, and the Suma, all flowing from lakes of the same names, and the Losocha. The most considerable river however is the Onega, which issues from Lake Lussa, near Lake Onega, and running through the government of Archangel, falls into the White Sea. Of the two last the summer season is 150 days, the vegetation being however very vigorous, on account of the length of the days: the autumn is bleak; the winter long and severe. In 1787 quicksilver froze in Wytygra. The corn, notwithstanding, ripens well, but unforested bogs destroy the entire harvest. The health of the inhabitants does not suffer by the cold.

Natural Productions.—Notwithstanding the cold and scarce of Russia, this estimate includes the circle of Kom, which some writers assign to Archangel, as it is done in the earlier Archangels. Hassel, 1714, following Georghi, who expressly states that Kom was taken from Archangel and added to Novgorod, by order of Alexander, in 1701, 1713, 1719, 1722, gives it to Archangel, without Kom, Olonetz is divided into seven circles.
severe winter and the short summer, agriculture is carried
on in all the circles, even in that of Kem, which is between
64° and 58° N. lat. The inhabitants cannot however
raise sufficient corn for their own consumption, and are
obliged to import from other governments. Flax and hemp
thrive, and are extensively cultivated. There is no fruit,
but the want of it is in some measure compensated by the
abundant wild berries, such as bilberries, wild-rose, and
cranberries. There are numerous small gardens, in which turn-
pips, carrots, radishes, onions, and sometimes cucumbers and
potatoes are cultivated. The government is well
provided with timber; and the crown forests alone cover
8,950,000 acres. Except the oak and beech, almost all the forest
trees common in Russia flourish here, except in the
circle of Kem. The southern mountains, the islands in
Lake Onega, and the circle of Kamael, are rich in forests,
in which there are not only the finest larches, but pines fit
for sawing. In about one week a large forest boat
derives its chief means of subsistence from the forests,
which supply them not only with fuel and timber for building
their houses and boats, but likewise with resin, turpen-
tine, pitch, tar, charcoal, tanners’ bark, barks, planks, and
lamps.

The fur-bearing animals furnish a profitable article
of commerce. The breeding of cattle is not carried on
to any extent, because their maintenance in the long winter
is too expensive. Almost every peasant however has a
cow or two, for the purpose of milk and dairy products.
The wild animals are bears, wolves, elks, gluttons,
many greyish-red and a few black foxes, a great number of
badgers, and wild reindeer. Seals are found in the two
great lakes. Waterfowl of various kinds abound. There
are some places where there is a great abundance of
flounder and eels. Great quantities of sturgeon and salmon are sent to St. Petersburg. The minerals are granite, serpentine in large masses and of excellent quality, porphyry of various colours, sandstone, quartz, lime, clay, slate, and slate- and limestone in large tables, plaster of Paris, and marble, which is procured in great abundance, especially at Tvidia, on the west side of Lake Onega. There is likewise a great deal of iron, which is partly smelted in six great furnaces, and partly by the inhabitants of the province into articles for domestic use. One manufactory of copperas produces annually 36,000 lbs. Besides these metals and minerals, the province has copper and gold mines, but not sufficiently rich to defray the expenses of working them; there are also silver, lead, and sulphur. Salt is obtained from some springs, but not sufficient for the supply of the inhabitants.

Manufactures and Trade.—It may be presumed that in
a country so far to the north, with a scanty population," these
factors can, on a large scale, produce manufactures of any
kind. More might be done if the inhabitants did not prefer
going to seek employment in the other provinces, particularly in harvest time. The articles exported are the natural productions of the government, cannon from a foundry between Kem and Tvidia, and tin-plate from the same town, and some tallow: by far the greater part of the exports goes to Petersburg, and the remainder to Archangel.

The great majority of the inhabitants are Russians: in
the western part there are many Finns, some of whom have
embraced the religion of the Russian-Greek Church, while a
large portion are still Lutherans. There are a few no-
made Laplanders in the circle of Kem.

Education.—Schnitler, in 1835, says: "For public in-
struction, Ozoneta is under the jurisdiction of St. Petersburg. In
1824 there were 204 schools, with 22 masters and 349
scholars, of whom 4 were girls; in 1832, 11 schools, with
31 masters and 402 scholars. We do not know the state of the
ecclesiastical schools. There is not one book-seller in the place,
and only a poor printing-office, which belongs to the crown." There is no great town.

OZONETZ, the former capital, is situated in 61° 0’ 45” N.
lat. and 32° 50’ E. long, on the river Onolla. It is an open
town, with 2800 inhabitants. There are three stone
and five wooden churches. A good deal of fine thread is manu-
factured here, and a considerable trade is carried on,
partly across Lake Ladoga with Petersburg, and partly at
the two annual fairs. The first dockyard established by Peter
the Great was at Ozoneta, and ship-building is still carried on.

* * *

According to Schuchart, (14:56), only 5 inhabitants to an English square mile: it may however be remembered that the area of the two great lakes and of the numerous small ones is included.

PETROZAVODSK, the present capital, is situated in 61° 47’
N. lat. and 34° 24’ E. long, on a bay of Lake Onega, and
on the road to Kem. The town is the new capital and
manufactories (sawmills) erected by Peter the Great, but now in
ruins. It is an ill-built uninteresting town, remarkable
only for the great imperial cannon-foundry.

(Hassel, Handbuch: Stein, Geogr. Lexicon: Canne narz.
Greece, Russia, la Polonaise, et la Finlande, vol. viii, Paris, 1835.)

OLONNE, LES SABLES D’. [Vendee.

OLGYRA', M. Say's name for a genus of opercu-
lated pulmoniferous gastropods, which, as well as lampinaria
of M. de J. L., would refer to the genus
Helicina of Lamarck. [Helicina, vol. xii, p. 169.]

OLYMPIA. [Era.]

OLYMPIAN GAMES, the chief of the four great na-
tional festivals of the Greeks, were celebrated at Olympia, a
sacred spot, celebrated by the Greeks in the time of the fifth
year. The exact interval at which it occurred was one
of forty-nine and fifty lunar months alternately; so that
it fell sometimes in the month of Apollonius (July), sometimes
in the month of Parthenius (August). (Boseck ad Prod.
that can be safely inferred from this tradition, vol. ii, p. 217.)
The period between two celebrations was called an
Olympiad. It lasted five days.

The origin of this festival is congealed amidst the ob-
scurity of the mythic period of Grecian history. It is generally
thought that it originated at Olympia, under Jupiter long before the
inception of the games. The Eleusinians had various traditions
which attributed the original foundation of the festival to
gods and heroes at a period long before the Trojan War.
and among these to Ixion, and to Ixionus, the Libi, and to
Hermes. The Eleusinians of Athens.
The Eleusinians further state that, after the Lycurgians had possessed themselves of Eleusinian territory, they were
consecrated to Jupiter, and that the games were revived by their king Iphitus, in conjunction
with Lycurgus, as a punishment for the disorders of
battle that had obtained the sanction of the Delphic oracle to
the institution, and appointed a periodical sacred truce
for people to attend the games from every part of
Greece and to return to their homes in safety. The
victors in the various events were a distinct class of personal,
from which the names of Iphitus and Lycurgus were
referred. (Plutarch. Lycurgus, I; Pausan. v. 20, 21.) OLB.
accounts mention Cleothenes of Pisa as an associate
of Iphitus and Lycurgus in the revival of the festival.
Aeolus, who has been embellished with a variety of legends, seems to
be that Sparta concurred with the two states most interested in
the plan, and mainly contributed to procure the consent of the other peoples.
Thucydides' History of Greece, vol. ii. 776, contains a series of
events which was the revival of Iphitus, according to Erateines, 854 a. c.
By Callimachus, 828 a. c. Mr. Clinton prefers the latter date.
(Fusti Helvetici, vol. ii, p. 408, note b.) The
Olympiads began to be reckoned from the year 776 a. c.
It is supposed that during the period of
when the vicissitudes of the victors from that year, which always included the
victors in the foot-race, and in later times those in the
other games.

Pausan. v. 8. 3.)
This, like all the other public festivals, might be attended
by all who were of the Hellenic race, though at first
by the northern Greeks and perhaps the Achaeans, Pelo-
nnesians were not admitted. Spectators came to Olympia
not only from Greece itself, but also from the Greek
colonies in Europe, Asia, and Africa. Among them were
members of the confederacy of the Delian League, certain
women however were forbidden to appear at Olympia
or even to cross the Alpheus, during the festival, under pain
of death. But at a later period we find women taking part
in the foot-race, though it is doubtful whether they had
their own separate events. An exception was made to this ban
exclusion in favour of the priestesses of Ceres and cer-
ta virgins, who were permitted to be present at the games, at
had a place assigned to them opposite the judges.

The management of the festival was in the hands of the
Eleans. Originally indeed Pisa, in which state Olympia lay, seems
to have had an equal share in the administration; but
the fiftieth Olympiad the Eleusinians destroyed Pisa and from
that time they had the whole arrangement of the games.
They procured the sacred tripod, and then throughout the rest of Greece. This
truce took effect from the time of its proclamation in Elea.
while it became the custom to invite all guests, all armed if it seemed an act of sacrilege. On the other hand, the Greeks had only then discovered it. In fact, they were the artisans of the war, and the finer rules for the regulation of the games, the imposition of penalties on individuals and states, and the power of excluding from the games those who resisted their decrees. They actually thus excluded the Athenians on one occasion and the Spartans on another.

The Olympic festival consisted of religious ceremonies, athletic contests, and races. The chief deity who presided over the games was Zeus, who was called by the Athenians and Romans as Zeus Apollo after Zeus. Zeus was a man and a god. His image was such of Zeus Apollo at Elis, where the Olympic games were held, the image of Zeus Apollo was the object of worship.

The Olympic games consisted of horse and foot races, leaping, throwing, wrestling, boxing, and combats. The two races consisted of the foot race, which was held only twice, and the chariot race, which was held every four years. The foot race was called by the Greeks to honour Zeus. The chariot race was called by the Greeks to honour Hera.

The Olympic games were celebrated with great magnificence and splendour. The Greeks would gather in large numbers, and the whole of Greece would come to witness the games. The games were held at Olympia, which was located in the Peloponnesus, and was known as the land of the gods.

The Olympic games were considered to be the most important of all the Greek festivals. They were held every four years, and the Greeks would travel from all parts of Greece to attend them. The games were considered to be a time of great glory and honour, and the victors were showered with honours and rewards.

The Greeks believed that the gods were watching over the games, and that the victors were chosen by the gods. They would therefore do their best to please the gods, and to ensure that the games were held in a proper manner. The Greeks believed that the gods would reward the victors with great honours, and would also give the Greeks victory in future wars.

The Olympic games were a time of great rejoicing and celebration. The Greeks would gather together to watch the games, and to cheer on the victors. The games were considered to be a time of great delight, and the Greeks would make the most of the opportunity to enjoy themselves.

The Olympic games were held in the month of Nisan, which is the month of March. The games would begin on the first day of Nisan, and would continue for a period of one month. The games were held in honour of Zeus, and were considered to be a time of great rejoicing and celebration.
odes were sung in honour of his victory; and his statue was often erected, at his own expense or that of his fellow-citizens, in the Altis, as the ground at Olympia which was consecrated to the games was called. At Athens, according to a law of Solon, the Olympic victor was rewarded with a prize of 500 drachms: at Sparta the foremost place in battle was assigned to him. Three instances are on record in the Olympic contests which were held and sacrifices offered to conquerors in the Olympic games.

It seems to be generally admitted that the chief object of this festival was to form a bond of union for the Grecian states. Besides this, the great importance which such an inter-state meeting of the Grecian states as this undoubtedly must have had, the festival exercised an immense influence in forming the national character. Regarded as a bond of union, the Olympic festival seems to have had but little success in promoting kindly feelings between the Grecian states, and perhaps the very rivalry of the contests may have tended to separate existing quarrels; but it undoubtedly furnished a striking exhibition of the nationality of the Greeks, of the distinction between them and other races. Perhaps the contingent effects of the ceremony were after all the most important. During its celebration, Olympia was a centre for the commerce of all Greece, for the free interchange of opinions, and for the publication of knowledge. The concourse of people from all Greece afforded a fit audience for literary productions, and the exactions for the completion of works which could not be laid before them. Poetry and statuary received an impulse from the demand made upon them to aid in perpetuating the victor's fame. [Pindar.]

But the most important and most difficult question connected with this festival is whether their influence on the national character was good or evil. The exercises of the body, on which these games conferred the greatest honour, have been condemned by some philosophers as tending to unfit men for the active duties of a citizen (Arist., Pol., vii. 14, 18; Xen., i. 27, p. 418); while those who live for the body are said to be another race, as a most necessary part of a manly education, and as the chief cause of the bodily vigour and mental energy which marked the character of the Hellenic race.

The above description of the Olympic games will serve also as a preliminary for the other great festivals of Greece. The chief points of difference between them will be seen by referring to the articles Isthmian Games, Nemean Games, and Pythian Games.


OLYMPIADS. [Philip of Macedon.]

Olympiodorus. There were several Greek writers of this name.

OLYMPIODORUS of Thbes in Egypt continued the chronicle of Eunapius to a.d. 425. Of the twenty-two books of his history (Iepouov olyvov), which he entitled 'Tesevropoia,' only a fragment of the first two is preserved in the Myriobiblon of Photius (60). His history began with the seventh consuls of the emperor Honorius, and was brought down to the accession of Valentinus. The work was dedicated to the younger Theodosius. The historian appears to have been employed on public business, for he mentions being sent on a mission to Donatus, king of the Illyrians. In his description of the African races he speaks of wells being made to the depth of 280, 300, and even 500 cubits, and of the water rising up and flowing from the spring. It is understood that these wells have been at times marked by the presence of the Artesian wells. [Artesian Wells, p. 414.] Olympiodorus was a heathen.

OLYMPIODORUS of Alexandria, who is said to have lived in the latter part of the sixth century a.d. was a Peripatetic, and wrote under the title of 'Meteorologica' of Aristoteles, which was printed by Aldus, Venice, 1561, fol. He is sometimes called the Younger, to distinguish him from the Peripatetic philosopher of the same name who was the master of Philo, and not known to have written any extant work.

OLYMPIODORUS, a Platonie philosopher, and also native of Alexandria, lived probably in the latter part of the sixth century a.d. There are extant by him commentaries on the 'First Alcides,' 'The Phaedron,' 'The Gorgias,' and 'Philebus' of Plato. His first adored of the students, who were his commentaries contains a life of Plato. His commentary on the 'Gorgias' was published by Routh, in his edition of the 'Gorgias' and 'Ruthydomus.' Oxford, 1764; on that the 'Phaedon,' by Andreas Mustoxides and Demetris Schinas, in the edition of Besser, Athens, 1826. This is in the 2nd and 3rd volumes of the "Initia Philosopli. ac Theolog. ex Platonico Fontibus," Frankf., 1826.

OLYPUMUS. [Anatolia; Crete; Thessaly.]

OLYNTUS, a town in Macedonia, at the junction of the Thyrmon, Geth, and Euxine. It was probably the town of Chalcidians and Euxenians of Euboea. (Strabo, x., p. 447.) It was sixty stadia from Potidea, and was visible from the latter place. (Thuc. i. 63.) At the time of the invasion of Greece by Xerxes, Olynthus was in the hands of the Battiata, who destroyed it, the Thermes, Geth, but Artabanus, who was conducting Xerxes to the Hellespont after the defeat at Salamis, suspecting the fidelity of the Battiata, took the town from them and gave it to the Chalcidians. (Herod., viii. 127.) Not long after, the Greek towns of Macedonia, afterwards fell under the dominion of the Athenians; but it revolted from them at the beginning of the Peloponnesian war, and asserted its independence, which was completely secured by the conquests of Brasidas, which time Olynthus became the most important of the Chalcidian towns, and the head of a powerful league, which was formed by admitting the citizens of the neighbouring towns to the enjoyment of the same civil and political rights as the Olynthians themselves. (Xen. Hell. vii., 11, 12; 11, 13.) Olynthus was joined by the town of Megara, and among others Pella, joined this league; which soon became sufficiently formidable to execare the jealousy of the Macedonians. They therefore gladly aid tase themselves of an opportunity which occurred for declaring war against Athens. Athens is in the same year sent a fleet of 10,000 men, under the command of Tarentilus, the brother of Agesilus, iii. 5.

Tarentilus obtained some slight advantages at first, but in the spring of the following year (n.c. 381) his army was completely defeated, and he himself was killed in the battle. (Xen., Hell., v., 12, 3. 11-13; iii., 6-16.) Tarentilus was succeeded in the command by Agesilas, one of the kings of Sparta, who died however soon afterwards; and under the command of the Olynthians and Thermopilae, who defeated the Olynthians and compelled them to make peace, which was granted (n.c. 379) on the condition that the Olynthians should acknowledge their independence upon the Macedonians, and assist them in all their wars. (Xen., Hell., v., 3, 24.) We accordingly read of the Olynthians early serving in the Trojan war against the Thespians. (Xen., Hell., v., 4, 2.)

After the Spartan supremacy had been destroyed by the conquests of Epaminondas, the Olynthians again recovered their independence, and restored their confederacy. But though they continued the war, they were defeated by the Thebans at Leuctra, in 371. In n.c. 349 the Olynthians broke off their alliance with Philip, and sent to Athens for assistance. The Athenians, at the advice of Demosthenes, who advocated the cause of the Olynthians in his third Olynthian Oration. [Demosthenes, ii., 11, 13.] He then sent a force to the assistance of Olynthus; and the Macedonians of Chares and Charidemus; but the Olynthians were nevertheless defeated, and obliged to surrender their town, which was destroyed by Philip, n.c. 341. (Diod., xvi. 11.)

Meryllena was the harbour of the Olynthians. [Strab. viii. 333.] It is situated on the coast of Thrace, between the towns of Macedon and Charidemus; but the Olynthians were not the builders of the town, which was destroyed by Philip, n.c. 347. (Diod., xvi. 11.)

The town was the chief and most powerful of the confederate cities; but it made peace with the Olynthians after his quarrel with the Athenians.

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OMALAXIS, a name given by M. Deshayes to a form among the Trochilidae, closely allied to Solarium, if not identical with it, and afterwards changed by the same author to Protosilis. [Trochilidae.] 

OMAN. [Arabia.]

OMAR I. (Abû Hāfštah Ibn-al-Khattāb), successor of Abû Bekr, and second khalif of the Mussulmans, was the third man to be converted to Islam in a manner apparently miraculous, and became one of Mohammed's most zealous and ardent followers; he accompanied him through all his military expeditions, and contributed by his experience and abilities to the success of his cause. [Mohammed.] 

After the death of Abû Bekr (A.D. 634), whose hādj, or chamberlain, he was, Omar was sworn khalif according to the express will of his predecessor. The first Act of his administration was to remove from the command of the Syrian armies the celebrated Khâlid Ibn Walid, surnamed 'The sword of God,' who by his rapacity and cruelty towards the vanquished had made himself a terror. Omar again combined with Abû Obeydah Ibn-al-Jerrah, another brave general who had distinguished himself in the wars against the Greeks; but Khâlid had virtue enough to accept the second post in the army, and he continued to serve under the new khalif. The reduction of the capital of Palestine was the result of one of his expeditions, and took Damascus, its capital, in the month of Rejeb, A.H. 14 (August-September, A.D. 653). 

After the capture of Damascus, the Moslems proceeded to the reduction of Emessa, Hamath, and Kenanearin. The enmity of the Arabians had been destroyed by the defeat of the Moslems at the bloody battle of Yermûk (636). The following year (637) Omar sent Amr Ibn al-As and Sarjîl to besiege Jerusalem. The city was stoutly defended by the garrison, but after a siege of many days, the Moslems, with the help of the inhabitants of the Arab states, entered the city and took it. A messenger having been despatched to Omar, who was then residing at Medina, he hastened to Jerusalem following the usual custom of that time, and on arrival demanded the surrender of the city. On the refusal of the inhabitants of the city to surrender to the Moslems, but to fight, a messenger was sent to Amur, and the latter, who was then in command of the armies of Palestine, has thus been described by the historian Tabari. 

He rode a sorrel-coloured camel, and was dressed in an old tattered habit of hair-cloth; he carried with him, in two bags, his provisions, consisting of dry fruits, barley, rice, and bullock scalded, besides a skin for the water. Whenever he halted to make a repast, he permitted those who accompanied him to partake of it, eating from the same wooden dish: if he took any rest, the earth was his couch. During his march he ministered to the wants of the inhabitants of several cities in the holy land he conquered, and he laid the foundation of the agricultural prosperity of the Moslems. 

Upon the news of his approach, the inhabitants of the city of Jerusalem rose in arms, and they were soon joined by the inhabitants of other cities of Palestine. The Moslems had been ordered to enter the city with the utmost gentleness, and to observe the most sacred ceremony of all the religion of Islam, the declaration of peace, and the giving of the pledge of allegiance. But the inhabitants of the city of Jerusalem refused to enter the city with the Moslems; they were then obliged to take possession of the city. 

The conquest of Egypt was followed by that of part of Africa. Amr pushed his victorious arms as far as the deserts of Tripoli and Bena. Armenia was again conquered, and the country was subdued by Mughreyrah (641), and Khorassan (642) by Ahnaf Ibn Kays, another of Omar's lieutenants. In the same year was fought the famous battle of Nevahend, which thus far they had won in the field, and which the armies of Yezdegerd, was killed, and the monarch himself obliged to seek an asylum at Farghahauz, the mountains of the Turks, where he died soon after in poverty. 

The success which attended the arms of Omar, his unerring instinct for the vanquished, his power to embrace the religion of the prophet, and, more than all, the inexorable justice which he dealt among his own people, excited against him numerous enemies at home and abroad, and several attempts were made upon his life. Ibarah, a Moslem, chief of the Arabian tribe of Ghoshān, became one of his most implacable enemies. Although a tributary to the Greek emperor, in whose states he lived with his tribe, and though professing the Christian religion, Ibarah went to see a play, and he was suddenly attacked by a Moslem, who had followed him, and embraced Islam with all his followers. He then took him with him on a pilgrimage to Mecca. While the neophyte was making as usual seven times the circuit of the Kaabah, an Arab of low extraction happened to run against him, and while falling off his shoulders. Ibarah presented the injury by his body striking the man a blow on the face. The man instantly complained to Omar, who, having summoned Ibarah to his presence, sentenced him to receive a similar blow from the criminal. This sentence was pronounced, and Ibarah was most warmly admonished, saying that he was a king among his own people, and that the offender deserved to be punished with death. 'My friend,' said Omar to him, 'the religion that thou and I follow makes no distinction among us, but the law, which it is the duty of a subject to obey, has assigned this punishment to thee.' Ibarah then confessed his guilt, and the sentence, Ibarah secretly left Mecca with all his suite, abjured Islam, and sought the protection of the Greek emperor. He had moreover sworn to revenge the outrage. [Vol. XVI.]
Having communicated his plans to a resolute young slave of his, Wathek Ibn Musaffir by name, he promised him his liberty, if he should succeed in killing Omar. Having arrived at Medina (638), where the khilaf was then residing, Wathek was informed that Omar was in the habit of sitting down every day under a tree on his way to the mosque. Wathek, having climbed up the tree, awaited the arrival of Omar. Wathek had been beneath the tree all day. He was upon the point of coming down for the purpose of stabbing Omar with his dagger, when, lifting up his eyes, he saw a lion walking round him and licking his feet. Nor did the lion cease to guard the khilaf until he awoke, when the lion immediately vanished. Wathek, finding himself in this strange circumstance, that he had come down, kissed the khilaf's hand, confessed his intended crime, and embraced the Moehammedan religion.

The object of Omar however was at length ended by assassination.

A Persian slave of the Magian sect, whose name was Abu Lulid Furz, had been obliged by his master Al-mugheryah Ibn As-shahlah to pay him two dirhems daily, in conformity with the Moehammedan custom, for the free exercise of his religion. Furz, resenting this treatment, brought a complaint before the shahif, who requested that some part at least of the trubation exacted of him might be remitted; but this favour being refused by Omar, the Persian swore his destruction, and some days afterwards, while Omar was among his ministers in the gardens at Medina, he stabbed him thrice in the belly with a sharp dagger. The people fell upon the assassin, but he made so desperate a defence, that although he was armed with no other weapon than his dagger, he wounded thirteen of the assassins of his own men. At last one of the khilaf's attendants threw his cloak over his head and seized him; upon which he stabbed himself, and soon after expired.

Omar languished five days. He died on a Friday, in the month of Dhul-hajjah, A.H. 23, answering to the month of November, A.D. 644. He was buried on the following Thursday, in a day, close to the prophet and Abu Bekr, in a mosque which he had founded at Medina, where his tomb is still visited with great respect by the Mussulmans. Having been asked, some time before his death, to name his successor, he refused; and the question of one of Omar's attendants should leave the khilafate to his son Abdullah, he remarked, 'It is enough that one out of my family has been forced to bear this burden, and account afterwards to his God for the command and government of the faithful.'

Omar lived a short time, and died. Authors differ as to the duration of his khilafate: the best-informed historians however say that he reigned between ten and eleven years. Abu-l-feda' (Ahn. Mos., tom. i., p. 231) says ten years, six months, and eight days. Omar was tall; he was not powerful in person; his complexion was fair. Mohammedanism cannot boast of a more virtuous sovereign or a more zealous apostle. It has been said of him that he contributed more efficaciously to the advancement of the Moehammedan faith than the prophet himself. He is recorded as the celebrated Persian historian, thus recapitulates the praiseworthy acts of this khilaf:—'He took from the infidels 36,000 cities or castles, destroyed 4000 temples or churches, and founded or endowed 1400 mosques. The prophet had the greatest esteem for Omar, whose daughter Hafsa he had married. On a certain occasion he was heard to say, 'If God had wished to send a second messenger to this world, his choice would undoubtedly have fallen on Omar.' The devotion, humility, and abstinence of this khilaf have been compared among the Moehammedans with those of the prophet himself. He tasted any other food than barley-bread and dates; water was his only drink; and he was often found asleep under the porch of a mosque or beneath a tree. He complied most strictly with all the precepts of the Koran. Butechius tells us that the khilaf ate. he performed nine times the pilgrimage to Mecca. In order better to conform to the regulations of the Koran, he lived by the work of his hands, supporting himself entirely by the sale of leather belts which he manufactured. But the quality for which Omar was most conspicuous was justice, which he is said to have administered with an even hand to infidels as well as believers. The historian Wikedd states that the staff of Omar was more dreaded than the sword of his successors. In the lifetime of Mohammed, a Moslem, condemned for his ini-toius treatment of a Jew, happening to appeal to Omar from the sentence of the prophet, he immediately cut him down with his scimitar for not acquainting in the sentence of so upright a judge. From this circumstance Mohammed gave the name of omad the punisher of evil, and oppressor of the weak, the divider, or the discriminator, thus doubly alluding to his action and the discernment which prompted it. Seven of the best Moehammedan institutions date from the reign of Omar. It was in his time that the methods of law were established, and its beginning fixed on the 16th day of July, A.D. 622. He was the first who kept armies under pay, and assigned permanent officers to the public revenue, and who instituted a police force to watch at night for the security of the citizens; and he promulgated some excellent regulations respecting the duties of masters towards their slaves. He was the first who assumed the title of Amir-al-umam, or governor of the faithful. He gave the ius suali-lilah (vice of the messenger of God), which his predecessor Abi Bekr had used. Omar's memory is an object of the greatest veneration among the Mussulmans of the Sunni, or orthodox sect; not so among the Shiitah, or partisans of Ali, who upon the occasion of his death, Omar, and Othman, as usurpers of the khilafate, to the prejudice of Ali, to whom, they pretend, it belonged as the nearest relative of the prophet.


OMAR II. (Abu Hafsa), the eighth khilaf of the house of Umeyyah who reigned in the East, was the son of Abd-al-aziz, and the following Omar, who shared the government of the East with his cousin Suleyman, in the month of Safar, A.H. 90 (Sept. A.D. 717). This khilaf, who on his mother's side was the great-grandson of the first Omar, imitated every respect the conduct and the virtues of his illustrious predecessor, and had the excellent taste to receive the courtiers and justice so much as to sacrifice to it his own interests and those of his family. He was religious and devout, and his mind was always occupied with the idea of a future world. One of the first acts of his administration was the acquittal of the accusers of the followers of Ali, by which he died at Damascus in the following year. Rejeb, A.H. 101 (Jan., A.D. 720), after a reign of two years and five months, in the forty-first year of his age. Omar had been extremely economical in his person and household, but his excessive liberality exhausted all his revenues. He himself said, 'I administer so as to cover the expenses of my funeral.' (Abu-l-feda', Annals Moslemici, vol. i., p. 267, et seq; Al-maklin, Historia Saracennica, p. 73, et seq.; Abu-l-feda', Historia Digestorum, transl. by Pococke, edit. rev., 12th edit. prefixed, ibid. vol. i., p. 244.)

OMAR IBN AL-AATTAS AL-MUTAWAKEL ALA-ILLAH (he who trusts in God), was the fourth or last sovereign of the dynasty of Beni Al-aftas, who reigned in the west of the Peninsula from A.H. 498 to 547 (A.D. 1048). After the death of his father Yezid (A.H. 1082) Omar succeeded him in a kingdom which extended over the greatest part of Extremadura and Portugal, and the capital of which was the city of Badajoz. At this time the once powerful empire of the Beni Umeyyah was divided into petty kingdoms, whose rulers were continually waging war against one another. [More.] One of the most
and enterprising of these petty monarchs was Omar, who
seems to have possessed all the qualifications of a good
Eastern monarch—invincible courage, mild but impartial
justice, and liberality touching upon prodigality towards
the learned. Soon after his accession to the throne, hearing
that Alfonso VII. was besieging Yahya, king of Toledo,
in his capital, he sent his son Fadhil to his assistance with a
considerable force; but after several sharp encounters, in
which he lost the best of his men, Fadhil was obliged to
retreat, and Toledo surrendered to the Christian king on
the 25th May, A.D. 1085. The taking of that important
capital, the rapidity with which Alfonso followed up his
success, intimated to the Moors that he would not lay down
arms until he had conquered the whole of Mohammedan Spain,
threw alarm among the Moorish kings. After a meeting held at Cordova (A.D. 1086) between the most wily
and cunning of the Moorish potentates, and with the
assistance of the barbs of the Moorish horse, the might
of Alfonso, it was agreed that Omar should write a letter,
in the name of the other kings, to Ysauf Ibn Tashefin, the
Almoravide sultan of Morocco, and
explore the help of his arms against the formidable Christian.
Yahya, where he long sought asylum, had his
fortresses overthrown and his people driven from
frontiers of Andalusia, immediately seized on the opportunity
offered him; and, crossing the strait, landed on the coast
of Spain, in August, A.D. 1086. [Almoravides.] Omar
and his ablest followers, being now master of the
three western provinces of Africa, determined to
unite all the southern Maghrib to the reign of
Muhammad, the young nephew of Al-mundhir, to take the field against the rebels, enjoining him
never to appear again in his presence unless he had
completely crushed the perilous outlaw. Al-mundhir sought
him, and awaited his arrival with dread. In the bloody
battle that ensued (A.D. 857) the rebels were completely
thrown, and their chief was obliged to seek refuge among the fastnesses
of the Pyrenees. But Omar had too much spirit to be put
down by one reverse, although he could scarcely depend
on the score of followers he had to the number of
Omar surrendered the city on condition that his life
and property should be preserved. The African
general agreed to the terms; but scarcely had Omar left
Badajos, with his family and a few faithful servants, when
a body, sent by c.s. to overthrow them, and they
were all put to death (Feb., A.D. 1090). This lamentable
catastrophe has been recorded in a beautiful elegiac
poem by an Arabian poet named Ibn Abdun. The poem is in
the Bodleian Library at Oxford.

OMAR IBN HAFSUS, a fanatic rebel who long defied
the all-power of the sultans of Cordova, was born at Ronda,
or, as it is frequently called, at Banadana, in 1039, and travelled
in the time of the Hejira. He was at first a tailor, but finding his
profession beneath him, he repaired to Truxillo, a town in Extremadura, and enlisted himself as a soldier. We next hear of him as a captain of banditti in the hills of Andales,
where he long battled the pursuit of justice, and
defeated all the troops sent for his apprehension. Some
time afterwards, scaring his narrow limits, he went to the
frontiers of Navarre, seized on a mountain fortress, and
therein extended his ravages into Aragon. This agitator,
having heard the sound of the horde of the Christians, increased his
forces, and assumed the tone of a sovereign, exalted the
inhabitants to revolt against the sultans of Cordova, and
made even an offensive and defensive alliance with Ordoño II., king of Leinhis, in France. There were alike a numerous
troop of pain, by which at that time (A.D. 859) agitated the kingdom
of Cordova [Moors], then in the hands of a warlike but
unfortunate prince, Mohammed I., this daring rebel, at
the head of a powerful army, composed of Mohammedans and
Christian converts, from the south of France, invaded
that empire, and to commit all manner of depredations, depicting
in every encounter the royal armies sent against him. As
might be expected, his success brought all the discontented
under his standard: Abd-al-malek, the governor of Lerida,
opposed him. A war of languages and of opinions followed
by other local governors. Mohammed advanced to chastise
the rebel at the head of his best troops (A.D. 866); but
Omar, who had as much cunning as courage, seeing that he
could not contend against the royal forces, had recourse to
the following stratagem. By his messengers he persuaded
Mohammed that his only object was to deceive their
common enemies, the Christians, in order better to turn his
arms against them; that he was still a true Mussulman, and
a loyal subject. Mohammed praised him for his policy,
promised him ample reward if he succeeded in his enterprise,
and actually sent his own nephew, Zaydi Ibn Aksiam, with a body of cavalry to strengthen Omar (A.D. 866); but
no sooner had the prince and his followers reached the camp,
than they were barbarously butchered by their treacherous
allies. On receiving the news of this catastrophe, Moham-
med immediately turned his arms against his own
country, and the former ambition of Al-mundhir, to take the field against the rebels, enjoining him
never to appear again in his presence unless he had
completely crushed the perilous outlaw. Al-mundhir sought
him, and awaited his arrival with dread. In the bloody
battle that ensued (A.D. 857) the rebels were completely
thrown, and their chief was obliged to seek refuge among the fastnesses
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hominum, non vacans hominis (the Pythagoreans attended to the words not only of gods but also of men, which they called omens). The term afterwards comprehended all signs of future events.

In all probability there is no nation that has not at some time entertained a belief in omens. We find traces of it in the Scriptures among the Greeks and Romans; it was general. The Persians, the Arabsians, the Scandinavians, the Germans, the Icelanders, the antient Britons, and the early Christians, were all imbued with this superstition.

Many curious instances of Roman superstition with references to omens are enumerated in Pliny (xxxviii. 32). The unlucky omens which preceded the battle of Cannae are enumerated by Silius Italicus, lib. viii. v. 626, &c.; see also Lucan, i. v. 522, &c. Pausaniai (iv. 13) enumerates the omens which attended the fall of Troy by the famous Iliad; in its study with the Lacedaemonians. Suétionius (Jul. § 59) says that Caesar, in landing at Adrumetum in Africa with his army, happened to fall on his face, which was reckoned a bad omen; but, with great presence of mind, he laid hold of the very same head, and kissing it as if he had fallen on purpose, he exclaimed, 'Teneo te, Africa.' (I take possession of thee, O Africa).

A superstitious regard to omens in our own country formerly made a considerable addition to the stock of human misery. We find omens spoken of and important with difference on the trivial and ridiculous accidents which alternately afforded matter of joy or sorrow to our ancestors. Nevertheless, in remote parts of the kingdom, a superstitious regard to omens still exists.

Dryden and Lee's 'Edipus,' act iv. sc. 1, also satirises this superstition:

"For when we think fate hovers o'er our heads,
Their apprehensions shoot beyond all bounds.
Owls, ravens, crickets, seem the watch of death;
Natural harbingers, fixed in the skies above;
Echoes, the very living voice of fate;
Governing ghosts, and all our fears increase.
Each molehill thought swells to a great Olympus,
While we, fantastic dreamers, have and puff,
And wish for nothing but an imagination's wish.
As if, like Atlas, with these mortal shoulders
A burden were loaden, which the gods had given.
Butler frequently alludes to omens in his 'Hudibras,' and by no writer have they been more successfully ridiculed than by Gay in his fable of the 'Farmer's Wife and the Raven.'

Hicks, in a Letter to Dr. Arthur Charlell, Master of University College, Oxford, dated January 23, 1711, preserved in the Bodleian Library, mentions 'the omens that happened at the coronation of King James II., which,' says he, 'I saw viz, the tottering of the crown upon his head; the broken canopy over it; and the flag hanging upon the White Tower when I came home from the coronation. It was torn by the wind at the same time the signal was given to the Tower that he was crowned. I put no great stress upon these omens, but I cannot despise them; in most of them, I believe, come by chance, but some from superior intellectual agents, especially those which regard the fate of kings and nations.'

Aubrey, in his 'Miscellanies,' 1660, 2nd edit. p. 37-46, has a communication to Omeron.

OMENTUM is a broad band of membrane connecting two or more of the abdominal viscera. The chief of these membranes is the great omentum, or caul, which forms a large fold connecting the stomach with the transverse arch of the diaphragm, in the form of less size and more importance connect the stomach and liver, and the stomach and spleen. The great omentum always contains some fat surrounding its blood-vessels, so that it looks like a network of fatty tissue, and it is especially the seat of the accumulation of fat in corpulent persons, in which it contributes largely to the peculiar prominence of the abdomen.

OMER, ST., a town in France, capital of an arrondissement in the department of Pas de Calais, 310 miles north of Paris in a direct line, or 139 miles by the road through Beauvais, Abbeville, and Hesdin, in §° 45' N. lat. and 2° 14' E. long.

This town was antiently a village, with a castle called Stitieu; the sea is said then to have flowed up to the place. It was fortified with walls about the close of the thirteenth century, about which time it began to bear the name of its patron saint. It is supposed to have been from the year 1467, that this town was first named the town of St. Omer.

It was included in the county of Flanders, and was among the possessions of the ducal house of Bourgogne, from which it was inherited by the Spanish branch of the Austria family. The emperor Charles V. strengthened the fortifications; and the town, in 1593, was transferred hither from Thereson. St. Omer was taken by the French in 1677, and confirmed to them the following year by the peace of Nimeguen. It was one of the places which the French obtained by means of the Treaty of England. Part of the English contingent of the allied army of occupation encamped near the town in 1814. The diocese was suppressed at the Revolution.

St. Omer is a fortress of the first class; it is surrounded by fortifications between two and three miles in extent, constructed of red bricks. It is strengthened by four forts and by entrenchments, and further protected by marshes, which can easily be flooded. There are four gates, of which only two will admit carriages. The town is traversed or surrounded by the Grand Canal, which is the continuation of the canal of St. Omer, which unites the Aa and the Lys. The principal streets are broad, but there is only one place, or square. The houses are chiefly built of yellow or grey bricks, except some of the public buildings, which are of red bricks. There is a town square in every parish. There are four churches, two parochial and two subsidiary; two of the churches are fine Gothic buildings; that formerly attached to the abbey of St. Bertin is the finest but was, in 1814, falling to ruin. The ex-cathedral is a small church, and the church of the collegiate is in a poor condition. The front of the church of the college, or high-school, is surmounted by two towers. The ramparts, which are planted with elm trees, the quays on the banks of the canal, and the Calais road, are used as public walks. There are many foundries.

The town formerly depended for support on the expenditure of the troops in garrison and of the great number of monks and other members of the religious orders. There were formerly twenty-five or twenty-six convents, including the abbey of St. Bertin, one of the richest and most famous of the Benedictine order in France, where Childebert III., the last of the Merovingian kings, was confined after his deposition, and where he died. There were also two hospitals, one of the priories, and the celebrated English college for the education of young Roman Catholic of England and Ireland. The building formerly occupied by this college is now converted into a military hospital. The inhabitants of St. Omer amounted, in 1831, to 19,344; a little more than 10,000 in 1841. They are engaged in the manufacture of candles, soap, starch, glue, woolen cloth, blankets, lace, fishing-nets, cord, linen thread, leather, and water wares, of which last a considerable quantity is exported. There are refining-houses for salt, dye-houses, breweries, distilleries, pot houses, oil-mills, and some other implement establishments. Trade is carried on in corn, wine, fish, oil, and coal. There are two considerable fairs in the year. There are in the town an Ursuline convent, a house of the Suors de la Charité, an hospital for orphans and foundlings, for poor officers, men of peace, and almshouses, a high school, to which is attached a public library of from 16,000 to 20,000 volumes, a school of drawing and architecture, a theatre, public baths, an arsenal, four powder-magazines, and three prisons. The canals and roads which converge on the town are those of Abbeville, Boulogne, Calais, Dunkerque, and other places promote its commercial and general prosperity.

North of the town are two suburbs: Haut Pont, extensive, and of importance, as it communicates with the Aa, and Lys, the inhabitants of which are of Flemish origin, and speak their language. They are mostly gardeners, and cultivate the marrows which were drained by their forefathers. The drainage is effected by means of ditches so numerous as to form a complete labyrinth, and to insulate almost every single field or garden. Each proprietor keeps his boat, by which alone he can reach the land which he cultivates; and in which he conveys part of his family, his gardening tools, and his produce. Vegetables, especially cauliflowers, an
cultivated rather than corn. The soil is remarkable for its fertility. The canals or pools of this marshy tract formerly contained many floating islands, of a few feet diameter, covered with grass and shrubs, which were regarded as objects of great curiosity; from neglect most of them have become attached to the bank or to the bottom of the ditches. Peat is dug in these marshes. The environs of St. Omer are fertile in corn, colza, flax and hemp, and afford excellent pasturage.

The arrondissement of St. Omer comprehends an area of 419 square miles, and includes 117 communes. It is subdivided into seven cantones, or districts, each under a justice of the peace. The population, in 1831, was 103,073; in 1836, it was 105,920.

OMERENTUC. [HINDUSTAN, vol. xii., p. 205.]
OMNAIDE, or UMBYCIA DYNASTY. [MOORS.]
OMNIBUS, a long-bodied coach or carriage, calculated to afford side-seats in the interior to twelve or fourteen persons. It was originated in Paris, in the year 1827, and derives its name from the last word of the inscription placed upon the sides of the earliest of those vehicles, namely, Enterprise générale des Omnibus. In the latter part of 1831 and beginning of 1832, omnibus carriages began to ply in the streets of London. Those from Paddington to the Bank were the earliest. Carriages of similar form were used in England as long stages more than forty years ago, but not answering the expectations of the proprietors in point of profit, they were soon laid down. Omnibus began to run in Amsterdam in September, 1839.

OMSOK. [SIBERIA.]
ONAGGA, or DAUW, names of the Equis montanus of Burchell. [HORSÍ, vol. xii., p. 314.]

ONAGRA'CEA. Under this name is comprehended a group of polypetalous exogenous plants, which, in their more complete condition, are certainly known by their inferior ovary, and by all the parts of the flower being four, or a constant multiple of that number. Thus in the plant now figured (Jussia grandiflora) there are four sepals, four petals, twice four stamens, four stigmas, four cells to the ovary, and the fruit when ripe bursts into four valves. The species characterised by this peculiarity are chiefly herbaceous plants, inhabiting the more temperate parts of the world, and have white, yellow, or red flowers, such, for example, as the great genus of Genothera, or Eruca, primroses, and the Epilobiums, which are so common as wild plants. It is only in the Fuchsia, which has a succulent fruit, and forms an approach to Myrtacee, that a woody structure is met with.

Fuchsia grandiflora.

1. a fruit nearly ripe, and surmounted by its four sepals; 2, a transverse section of the same, to show the four cells.

But although genuine Onagraceae are thus plainly limited, botanists admit into the order other plants which do not possess the character proper to the order, and which are regarded as imperfect states of it. Thus Hippurs, which has only one stamen, no petals, and a one-celled ovary, is regarded as a case of degradation from the Onagraceous type; and Lopezia, with only one perfect stamen, one imperfect stamen, and two petals, is considered another but less degraded condition of the order. (De Candolle's Prodromus, vol. iii., p. 35.)

A large proportion of Onagraceous plants are ornamental, and consist of common garden flowers, especially the species Genothera, Godetia, Epilobium, and Fuchsia; but none of them possess any useful quality worth recording.

ONCHID'ORIS. [CYCLOBRANCHIATA, vol. viii., p. 249.]

ONCHID'IDIUM is a very large genus of tropical and subtropical Orchidaceae, found in the western hemisphere, where the species are common, especially in Mexico and some of the West Indian islands, Brazil, and Peru. They have usually yellow flowers spotted with a rich reddish-brown; sometimes the blossoms are purple, and more rarely white. They belong to the Vandeacean section of their order [Orchidaceae], and are known by their labelium being broad, more or less lobed, distinct from the column, and furnished at the base with a tuberculated disk, which usually presents some grotesque appearance. Their sepals and petals are spreading, their column has a membranous ear on each side, and they have two pollen masses attached to a long cajculium. The most remarkable species is the Butterfly-plant, so called in consequence of the supposed resemblance of its flowers to some insect upon the wing. This is found in Trinidad, growing on the branches of trees, and bears a long, jointed, compressed, spotted scape, from the apex of which swings lightly a large yellow and brown flower, whose labelium is compared to the body of an insect, the column to its head, a pair of processes arising from the column to short antennae, and the long narrow sepals and petals to legs. It is now common in both houses.

Oncidium Papilio, or Butterfly Plant.

ONDATRA. [MUSQUASH.]
ONEGA, Lake. [RUSSIA.]
ON'EG'ILIA, a province and town of the Sardinian States in the western Riviera of Genoa, between the provinces of San Remo on the south-west and Albena on the north-east. The Apennines bound it to the north, and separate it from the valley of the Tanaro in Piedmont. The province of Oneglia consists of several valleys sloping from the foot of the Apennines to the sea, and watered by mountain torrents. The principal stream, called the Impero, flows by the walls of Oneglia. The chief produce of the country is oil, of which 100,000 barrels are exported annually, partly by sea and partly by land, to Piedmont and Lombardy. The average price of each barrel on the spot is about two pounds sterling. The population of the province is 52770, distributed into 67 communes.

1. Oneglia, where the authorities reside, is a town of
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ONI

3400 inhabitants: it has a fine collegiate church, and a col-
lege kept by the fathers Scholasticum Pauum. Onegia is
the birthplace of the celebrated naval commander and states-
man Andrea Doria. In 1792 the French admiral Truguet
appeared with his fleet before Onegia, and sent a boat to
summon the town to surrender, France being then at war
with the Turks and the Dukedom of Savoy. The Onegians
fired upon the boat, and killed some sailors and wounded the
officer in charge of the boat. Upon this Truguet began a
furious cannonade upon the town and almost entirely de-
stroyed it. The people ran away to the mountains. The
town has been rebuilt, and it is said to be on some of the
sea. 2. Porto Maurizio, a few miles south-west of Onegia,
a busy thriving seafaring town, has a small harbour for
boats and a roadway for larger vessels: it contains nearly
7000 inhabitants, many fine houses, a handsome collegiate
church, and several other churches with good paintings of
the Genoese school. The surrounding hills and valleys are
planted with olive-trees and studded with country-houses.
3. Diano, which is divided between Diano Castello, or Up-
er Diano, and Diano Marina, or the lower town, contains
altogether about 9000 inhabitants, and is divided in seven
villages or communes. The valley of Diano is one of the
most fertile districts of the Riviera of Genoa. It produces
oil and good wine. A great part of the population are
Onegians was formerly a feudal principality, and once be-
longed to the family of Doria, who sold it in 1576 to Em-
manuel Philibert, duke of Savoy and prince of Piedmont.
From that time it remained subject to the House of Savoy,
under which the inhabitants were divided in consequences of
the wars of the Revolution. At the Restoration it was formed
into a province with the neighbouring Genoese district of Porto
Maurizio. A new road leads from Onegia over a pass in
the Apennines, about 3000 feet high, to Ormea in the
valley of Piedmont.

(Serratori, Statistica dell Italia; Bertolotti, Viaggio nella Liguria Marittima.)

ONEIDA. [NEW YORK.]

ONGAR. [ESSEX.]

Onions. The varieties from which the varieties of the
common onion have been derived is the Allium cepa. Its
uses are almost universally known, and its cultivation is
practised in most countries. The range of latitude within
which it may be grown extends from the tropics almost to
the coldest verge of the temperate zone. Its leaves
and roots are of an annual nature, insomuch as they die in
the course of a single summer, after perfecting a bulb; the latter
however is biennial, and capable of putting forth fresh roots
and leaves in the following season, and of acquiring an
increase in size. This property is taken advantage of in
one of the modes of cultivation.

The following are the principal varieties:

Early Silver-skinned—valuable only on account of its
crispness.

Silver-skinned—moderately large, flat, shining, white,
mild.

Portugal—large, oblate, imported largely from the country
of which it bears the name, but only adapted for a supply
during the early part of winter; quality rather mild.

Tripoli—the largest of all the varieties; oval, or some-
what flattened, light red, mild, but does not keep long.

Spanish, or Reading—large, flat, white, mild; resembles
the Portuguese onion, but is better adapted for cultivation
in the North of England.

Strasburg—large, flat or globular, light red tinged with
green, strong-flavoured, and keeps well.

Depford and Globe—are subspecies of the preceding,
smaller and finer, and yield generally good crops.

Jumna or Kersy—fine, firm, brown, red; keeps remarkably
well; flavour strong.

Blood-red—middle-sized, flat, deep red; keeps well, but
of the strongest flavour, on which account it is medicinally
preferred to the above varieties.

Yellow or Straw-coloured (Oponon paille ou jaune of the
French)—small, globular, firm, valuable for pickling.

Two-bladed—small, roundish, green, with little foliage.

Potato or Under-ground Onion.—This peculiar variety
forms numerous bulbs below the surface, which attain
maturity early in the summer.

Tree or Bulb-bearing Onion—beats, instead of flowers,
small bulbs, which are only useful for pickling.

Onions will succeed in any good rich soil, provided it be
neither too wet and adhesive, nor on the other hand, too
dry and light. They may even be grown successively on
the same spot for a number of years, contrary to what
happens with the majority of crops. Abundance of well-
prepared manure should be thoroughly incorporated in
digging the soil. The dung of pigeons and poultry is usu-
ad applied, for its fineness and heat. The French gardeners,
prefer sheep-dung.

The time of sowing the general crop is from the middle
of February to the middle of March, according to the state
of the ground and of the weather. The seeds may be sown
thickly or thinly, the latter method as the soil is usually
this being more easily stirred on the surface and kept
clean. In either case the seeds should be covered as
lightly as possible.

When the leaves indicate, by the general yellowness of
the points, that their office has been performed, the necks
should be bent, and the bulbs pulled up soon after, and
spread so that their fibres and stems may dry and wither
in the sun. They may then be stored up in any dry airy
situation.

Very large onions may be obtained by sowing thickly as
April on poor soil, so that the produce in the first summer
may be of small size. The crop is then taken up as above
directed, and the smallest and firmest are selected for planting
rich and well-prepared soil in the preparation of the
next year. Onion seed is sown for picking should be sown thickly
on poor and dry soil. The silver-skinned, yellow, and
bladed onions are the best varieties for this purpose.

For a supply of young onions in spring, the sowing should
be done in March, about the middle of that month, and
by Gamaliel; this would place him about the time of
Christ. From the mention made of him by the Babymus
Talmud, and from the purity of his language, which is
much better Chaldee than that used in Palestrine, and
approaches more nearly than any other extant specimen of
the language to the Chaldee in Daniel and Ezra, Barber
supposes that he was a native of Babylon. His Targum
contains the Pentateuch only. It is a faithful version,
and corresponds so exactly with the Hebrew text, that it
may be considered as the same. The same is observed in
the Jewish synagogues, down to the beginning of the
sixteenth century. This Targum is not mentioned by
Origen or Jerome, which may perhaps be accounted for by
the circumstance that Origen did not know Chaldee, and
that Jerome died in 420, while the Targum was
printed in the Antwerp and Comptusian Polyglot, in
Buxtorf's Hebrew Bible, and in Walton's Polyglot.
It has been published separately at various times.
The edict which has been generally followed is that of
Verona, 1121, and 1525-6. It has been translated into Latin by Asa-
dem Zamora, Paulus Fagus, Bernardinus Baldoz, and
and Leon de Zamora.

(Prideaux's Connection, pt. ii., bk. viii., p. 757; Herin's
Fed., p. 59; Winer, De Onkelos et juique Paraphraset
Chaldaica Dissertatio, 4to, Lips., 1820.)

ONOMATOPÉIA (ονοματοποιία, νοματοποιία), wke-
literally means 'the making of words,' is the name given
to those words which are formed either by imita-
Dionysius the Areopagite, or the sound of the trumpet by the
word turamentum.

(Servius on Aem., ix. 503.)

ONTARIO. [LAKE OF CANADA.]

ONYCHOTRUTHS. [TEETHED.]

ONYCHOTHERIUM, Fischer's name for the Meg-
onyx Jeffersontoni. [Megatheridio, vol. xv., p. 65.]

ONYX. [QUARTZ.]

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OODIN. [HINDUSTAN, vol. xii., p. 214.]

OOLITE (Oligo), a principality in the province of Malwa, subject to Junkojee Scindia, situated on the right bank of the Sipper river, near to the south-western extremity of the province. The soil is very fertile, producing in ordinary seasons abundant harvests: but when the season is more than usually rainy, the ground is rendered so soft as to impede the operations of agriculture; and on the other hand, when the season is dry, the crops are reduced to great extremity owing to the absence of wells and all other means for irrigating the lands. The town of Ooljee is situated in 23° 11' N. lat. and 75° 42' E. long.

Until the transfer of the seat of government to Gualior, Ooljee was divided into two districts—Ullaloor or Hulaloon, and the town of Ooljee itself. It is now a large and populous city six miles in circumference, the whole area being occupied with buildings, but many of the inhabitants have been driven away since the departure of the court to Gualior and Indore, and the number of dwellings has rapidly and materially diminished. The part of the houses are low; scarcely any exceed two stories in height. Nearly all are built of mud throughout, walls, roofs, and floors being of that material. A few of the superiors houses have wooden fronts, which are elaborately carved, and the roofs tiled. Some of the members of the Scindia family still reside at Ooljee.[HINDUSTAN.]

OOLITE, the characteristic rock of one of the great systems of secondary strata. [GEOLOGY.] One of the principal objects of the description of the free-stone of the Scottish Highlands has been to establish the fact that the uniformity of its composition is more apparent than real, for although the strata may be composed of different materials, yet there is often a close connexion between them. In Northumberland, which is wholly composed of round grains of concretionary structure, adherent by their contiguous surfaces, so as to form a stone easily wrought with the chisel, and of a durable quality. The Bath free-stone is another example, where the grains (often hollow) are connected by interposed calcareous matter; the Portland stone resembles the former, but contains disseminated or aggregated silice; and not to extend the catalogue, much of the Lincolnshire free-stone is oolite, of which the round grains, very large and distinct, show obviously the concentric lamination which belongs to certain oolites called 'pisolithes,' and which may be detected in nearly all with the aid of the microscope.

OOLITIC SYSTEM. For the order of succession of the strata composing this great series of English strata see GEOLOGY. On the continent of Europe the corresponding strata receive, from their conspicuous development in the Jura Mountains, the titles of Jura Kalk and Calcaire Jura-siens.

ONOALASHKA is the most frequented of the Aleutian Islands, which stretch from the peninsula of Alaska, a part of the continent of North America, across the Pacific towards the peninsula of Kamchatka. It is situated in 54° N. lat. and 136° 20' W. long., and extends from north-east to south-west about fifty miles in length, but it varies greatly in width. Black masses of rocks rise perpendicularly out of the sea to a great elevation, and their summits are covered with snow. It is by immersion that the Aleutians have for centuries lived; and the life of the non-aborigines of the same name has really laid in the sea, as no one real has been found, so far as the island has been yet examined. But there are several hot springs; and earthquakes are common. The rocks consist of granite and porphry.

Oolashka and the islands lying west of it are entirely destitute of trees. Willows occur in damp places, but they hardly rise above the luxuriant growth of grass and herbs. Even the lower hills only support alpine plants. The moisture of the atmosphere maintains a perpetual verdure out of the strain, notwithstanding the cold climate. The Russians have brought cattle to the island, and Lütke, in 1826, was able to get beef. Potatoes, turnips, and radishes are the only vegetables that thrive. No kind of grain succeeds. The lower shores of the islands are often lined with drift wood, which consists of pines, and several kinds of trees which grow in a much warmer climate, as the caphnophoar-tree.

The inhabitants live chiefly by fishing. The surrounding seas abound in cod, halibut, &c., and especially in seals. Whales are also numerous. Wild geese and ducks are very abundant in winter; there is a rise about the beginning of winter for food. The eggs of the sea-fowl, which hatch in the neighbouring islets and rocks, are also collected. The inhabitants are Aleutians: their number is very small. The Russian American Company has an establishment at Illimunut, on the north-eastern extremity of the island, which, in 1826, was inhabited by twelve Russian and twenty Aleutian families. The harbour, being surrounded by high mountains, is very safe, but it has the disadvantage of being difficult of access, owing to the entrance being obstructed, tortuous, and deepening no bottom at 100 fathoms.

The climate of this place is rather wet than cold. There are almost continual fogs during the winter, and rain is abundant all the year round. The mean annual temperature is 40°, which is a degree above that of Trondheim in Norway, and not quite two degrees less than that of Christiania.

(Sauv's Account of a Geographical and Astronomical Expedition to the Northern Parts of Russia; Langsdorf's Travels through Variou parts of the World; Kotzebue's Voyage of Discovery into the South Sea and Behring's Strait; Lütke's Voyage autour du Monde.)

OORT, ADAM VAN, son of Lambert Van Oort, was born at Antwerp in 1557. He derived his instruction from Luther, and soon became his intimate friend and chum, and likewise as an able painter of landscapes. Van Oort's greatest honour however is, that he was the first instructor of Rubens, whose works have immortalised his master's name as well as his own.

Though in his youth his composition was agreeable and the drawing correct, he neglected the study of nature, and was entirely a mannerist. He seems not to have looked on painting as a fine art, but as a means of acquiring wealth. In his latter time his performances had little to recommend them, as they were freely painted with the first colouring. Yet, with all his defects, he was looked upon as a good painter; and Rubens used to say that if he had studied at Rome, he would have surpassed all his contemporaries. He died in 1641, aged 54.

OPAL. Of this mineral, which is essentially a hydrate of silica, there are mentioned by Mr. Brooke, in the 'Encyclopaedia Metropolitana,' eleven varieties, and nearly all are described by Phillips.

Precious Opal. This mineral is white, bluish or yellowish white, and exhibits a beautiful variety or play of colours, as blue, green, yellow, and red, several of which appear together. Fracture conchoidal, with a vitreous or resinous lustre: it is easily broken, but scratches glass. Specific gravity 2.66 to 2.99. Infusible by the blow-pipe, but becomes opaque and loses water. The most beautiful specimens occur in Hungary, but it has also been found in Saxony, South America, &c. Analysis of the Hungarian opal by Klaproth—Silica, 9o; Water, 10.

Fire Opal. In this the internal reflection is bright red. It occurs with the precious opal in Hungary, and has also been found in Cornwall.

Hydrophane. It is usually opaque, but is rendered transparent and exhibits the iridescent colours of the precious opal. It is by immersion that it contains a little alumina in addition to silica and water. It is found chiefly in Hungary and Saxony, and specimens have also been produced in Cornwall.

Common Opal. This is of various shades of colour, as white, green, yellow, and red; but is entirely destitute of the play of colours exhibited by the noble opal. In other varieties they generally resemble each other. It is used to contain a little oxide of iron mixed with the silica and water. It is found chiefly in Hungary and Saxony, and specimens have also been produced in Cornwall.

Semi-Opal. This is more opaque than common opal, and is dull. It occurs either white, grey, brown or green. It is found in the same places as the foregoing.

Wood Opal, so called from its showing the woody structure. It occurs of several tints of white, grey, brown, and black. It is generally harder than semi-opal, but does not materially differ from it in other properties. It occurs in Hungary and in Transylvania.
Cachalot is white opaque opal; harder than common opal; dull; brittle; fracture flat conchoidal. Specific gravity 2.4. Infusible before the blow-pipe. It is found on the banks of the river Cach in Madagascar. It occurs also in the Fiji Islands, Greenland, and Iceland.

*Opal Jasper. Fergusineous Opal.—Opaque, or but feebly transparent on the edges. Colour generally deep shades of red, yellow, and grey. Fracture flat conchoidal. It appears to be a siliceous Jasper, and may be the finer analysis of a variety from Telkebanya gneiss—Silica, 43·5; Oxide of Iron, 47·0; Water, 7·5. It occurs in Hungary, Siberia, &c.

*Melinite.—Occurs in irregular or reniform masses. Colour usually smoky-brown. Opalescent or slightly translucent. It occurs at Autun, and St. Brieuc, in beds of adhesie slate. According to Klaproth it consists of—Silica, 85·5; Alumina, 1·1; Water, inflammable matter, and traces of lime and iron, 11·

*Hyalite. Muller's Glass.—Occurs in small globular and botryoidal forms. Colour vitreous; brittle, but scratches glass. Specific gravity about 2·4. Infusible by the blow-pipe. It occurs in amygdaloid, near Frankfort-on-the-Main, in Hungary. &c. According to Bucholz it consists of—Silica, with a trace of alumina, 92; Water, 6·7.

*Gauzite. Gauzite.—Gauzite is a mineral, is white, or yellowish or greyish white. It is brittle. Specific gravity about 1·807. Infusible per se by the blow-pipe. It is deposited by the hot springs of Iceland and elsewhere. According to Klaproth it consists of—Silica, 97; Iron, 3; Water.

*O'Pera (Ital., work), a regular drama set to music, always accompanied by scenic representation, frequently by machinery, and sometimes by dancing. The true Opera, as found on all the Italian stages, whether in Italy or elsewhere, and at the French Opera at the Academie Royale, admits no speaking; all is recitation or air, &c.; while what is called Opera in the national theatres of Germany and England, as well as the French Opéra Comique, is of a mixed kind—partly spoken, partly sung.

The constitution of an opera, says Rousseau, are the Poem, the Music, and the Decorations. The poetry addresses itself to the mind, the music to the ear, the painting to the eye; and it is the duty of the three to unite their powers, in order to make and impress an impression on the heart. Hence, he says, the well-known definition of music: [Music, p. 19.] Rousseau degrades the art which is the vital part of the opera, to a mere sensual enjoyment; but in the very next sentence he betrays that inconsistency which we have before had occasion to notice, by declaring that music was not to be considered as an evanescent picture, to give to poetry new force, to decorate it with new charms, and thus at once to exalt and triumph over it. If the opera music of Rousseau's time, most of which is now deservedly forgotten, were as good as his wit, it might still have beauty to the people of Apostolo Zeno and of Metastasio, how much more must the feeble lyric drama of a later period be indebted to the exquisite melodies, the soul-stirring harmonies, of a Cimarosa and a Winter, of a Mozart and a Rossini! The fact is probable that the increasing taste for music in France and considered otherwise than as a vehicle for music, and, but for the scenery and decorations, the saying of the Abbé Arnaud, that the Italian opera is a concert, of which the drama is the pretext, would be applicable to no more in ten of all productions of the kind that have appeared during the last seventy or eighty years. Rousseau, Algarotti, Arteaga, and most writers on the Opera, refer to it as performed at the Académie Royale, and on the stages of Milan, Turin, Naples, &c., where the scenery, the machinery, are always splendid and appropriate, and not such as are so frequently witnessed at the two Italian theatres of London and Paris. Voltaire, in the following panegyrical lines, had in view the grand opera of the French capital, in which the same was, and still is, quite on an equal footing with the opera.

It faut se rendre à ce palais magique, On trouve ses ailes, sa danse, son oubli, L'art de tromper les yeux par les couleurs, L'huile, en poudre, les yeux de secrète, De ces places sont plus aimanter uniquement."

And in all Opera-Houses, so properly called, beautiful scenery, and rich decorations of every kind, will never cease to captivate, will always be required; though it is probable that the increasing taste for music in France and England will soon lead to its being considered of such paramount importance in those countries, that the Ballet will lose much of its attraction, and by being reduced to a very subordinate and less costly condition, enable managers either to bestow more expense on the opera, in all its parts, or to diminish the prices of admission, now so exorbitantly high.

The moment that the Opera appeared out of its native country, and especially when it reached the British shores, it was attacked by a host of critics and wits. Addison and his friends were among the first to attack it. The merits of the work were held up to the public gaze, it, and were followed by Pope, Young, and many others. Addison lived to retrace his opinion, for some of the absurdities which the opera in its infant state presented were soon corrected; though certainly enough remained, and some were added, which, if they did not derange the wits who tried, or may still judge, the melo-drama by the cold stubborn laws of unpoetical probability. There were not wanting however defenders of this favourite child of the gay and fashionable world, and foremost among them was the author of the verses above quoted. Those candid friends of the Opera—in the preface to his tragedy of Oedipus—we shall here translate.

"The opera," says M. Voltaire, "is a representation as whimsical as it is magnificent; where the eye and ears are more satisfied than the judgment; where a subject to music produces faults of the most ridiculous kind; where it is necessary to sing airs while destroying a city; and to dance around a tomb; where are seen all the palaces of Pluto and that which is very surprising and affecting, chapels and temples erected and destroyed in the twinkling of an eye. We tolerate these extravagancies, we even admire them, because we imagine ourselves in fairy-land; and as we find splendid scenes, elegant dances, fine music, and tortures incomparably more sensible than the operations of real life, we yet cannot but find it absurd to require unity of time, place, and action in Alcina, as to introduce dances and devils in Cinna or Rodogune. Nevertheless, though operas are released from such rules, the best of the kind are those in which they are least frequent; and we are not the more disposed to resemble them, the more we despise them. But these triumphs are next to final; the Yankees of the scene are not willing to be surpassed by the many—if a fault, it is, we believe, a fault not in the moderns, but to those whom it has hitherto been thought right to consider as the models of dramatic propriety and poetical taste. This leads us to an inquiry concerning the origin of the melodrama,—i.e. the musical drama or opera.

That the opera, properly so called, whether Italian or French, is the offspring of the Greek drama—an opinion that for years past has been gaining ground—is supported by the most learned and able writers on the subject, and seems likely ere long to be universally adopted. The first that we have met with who has touched on this point is the philosopher of Malmsbury; Hobbes, who, in a letter to Sir William D'Avenant, says, 'There is, besides the grace of style, another cause why the antient poets chose to write in that manner, it is the invention of the new machines, which first at first with intention to have them sung, as well as recital as dramatic (which custom hath long time been laid aside, but began to be revived in part of late years in Italy, and could not be made commensurable to the voice or orchestra as it is, the way we make music to our eyes, certain and undistinguishing (like the way and motion of a ship in the sea), as not only to dispose the best composers, but also to disappoint sometimes the most attentive reader, and put him to hunt counter for the sense. It was therefore necessary for poets in their speeches, monody, &c. This letter is dated Paris, 1650; consequently written anterior to the establishment of the Académie Royale, or French opera.'

Dryden, in the beginning of the preface to his Albion and Albamia, rather hastily calls the opera "a modern invention, though built upon the foundation of the ethical worship.
and conjectures that it was borrowed from the Spanish Moors; but in a postscript to the same, he corrects himself in the following rather awkwardly-expressed manner: 'Possibly the Italians went not so far as Spain for the invention of their operas: they might have it in their own country, and that by gathering up the shipwrecks of the Athenian and Roman theatre, which were very rich in obscure and vivid scenes, music, dances, and machines, especially the Greek.' The learned Jesuit, Pére Menestrier, in his work, Des Représentations en Musique, maintains that the ancient tragedies were chanted. Metastasio, in his Estratto de' Drammi di Teatro, printed by order of the empress of Germany, puts together the tragedies of the Greek and Roman dramatists, both tragedies and comedies, were sung, and cities in proof of this numerous classical authorities. Pyo, in his Commentary on the Poetics of Aristotle, while disputing some of the inferences of Metastasio, is obliged, though unwillingly, to acknowledge that the opera 'most probably' is 'a linear and legitimate offspring of the Greek tragedy,' and that the vastness of the Roman theatre turned 'the necessary means of modulating the voice into a real musical accompaniment,' that is, the magnitude of the place rendered chanting or recitative unavoidable.

Rousseau is disposed to combat the opinion that the opera is a derivative of the ancient drama, but admits that the Graces is the earliest. He says, an antient musical singing, that they were accompanied by instruments, and that choruses formed part of them. He afterwards says 'that all Greek poetry was delivered in recitative, because, the language being melodic, it was sufficient to add these syllables of its pauses at the end of the verse to render such recitation perfectly musical.' Granting the recitative and chorus, it seems to us that the lineal descent of the opera is proved. The reader will find other evidence on the subject in our article Music, pp. 24, 26, first column.

But the resemblance of the opera, as it first appeared, to the antient drama, will amount to little less than identity, if the statement and reasoning of the erudite author of A Discourse on the French Stage is observed. He says: 'The performance of a new opera is found to have been prepared, that the same union was borrowed from the same source, and that the union was taken from the antient drama, which was observed by Frenchmen for half a century.'

As 'Venezia,' the writer continues, 'was the place where the opera first appeared in splendour, so it is highly probable that there the antient tragedy had been kept up in some retired part of Italy which the barbarians never conquered, and we then obtain a fair account of the rise of the modern Opera, which hath so much confounded all aquisy.'

In the antient world, there is the distinct mention of a 'Theater of Nymphaeum,' which was a sort of a barbarous conqueror. Other circumstances of the same kind, produced by the same poet, who is the only writer that has beard of it, are seen in the same period. While for the rest of Italy was overrun by the nations from the north, the seas and mountains of Venice preserved her alone from their incursions. Hence, it is idle to talk of Venice from every part of Italy; hence the very form of the republic hath been maintained for three hundred years; and from those views of security, it was natural for the helpless arts to seek an asylum within her canals from the fury and ignorance of a barbarous conqueror. Other circumstances concur to strengthen this opinion. The Carnival first appeared in splendour at Venice, beyond every other part of Italy. Now the Carnival is, in many circumstances, a transcript of the antient Saturnalia of Rome.

That the modern Opera, Dr. Brown proceeds, 'is no more than a variable mode of the antient tragedy, and not a new invented species, will appear still more evident, if we consider that it is an exhibition repugnant to the universal genius of modern customs and manners. We have seen the nature of poetry in theatre in the modern drama. We have seen that the same union forms the tragic species in the natural progression of things. Hence we have deduced the musical tragedies of antient Greece. But in antient Rome, it appears, they arose merely from imitation and adoption of the same species; but as the Romans wanted the first seeds or principles whence the musical tragedies of the Greeks arose. The same reasoning takes place with respect to the modern opera: it entered in that very city where, most probably, it must have lain hid; in a city where all entertainments are evidently borrowed from those of antient Rome. And if to these arguments we add, that the subjects of the first Opera were taken from the fables of antient Greece and Rome, and not from the events or achievements of the times; and further, that in their form they were exact copies of the antient drama; such accumulated proofs amount to nearly a demonstration that the Italian Opera is but a revival of the old Roman tragedy.' (pp. 201-203.)

Some writers imagine that the modern musical dramas originated in Italy, towards the latter part of the sixteenth century. Menestrier believed, on the authority of Sulpitius, that the first opera was performed at Bologna about 1486, and that a few years after, a gentleman of Lombardy, named Botta, entertained a duke of Milan with a sumptuous supper, accompanying each course with a kind of opera (une espèce d'opera). Performances of the latter kind certainly could not have exceeded a single scene. But collating what has been stated by various authors, we are persuaded that no regular opera was produced and publicly performed till Ottavio Rinuccini wrote and Jacopo Peri composed the drama of Euridice for the nobilities of Henri IV. of France and Mary of Medicis. This was represented in a very splendid manner at Florence, in 1600, and there published in the same year. Dr. Burney tells us (Hist., iv. 25) that he was never able to find more than one copy of the early operas performed either by Peri or Rinuccini, a descendant of the poet. Having the good fortune to possess this very rare work, which is now before us, we can corroborate what the musical historian has said of it, that it is printed in prose and barred, very uncommon, for the cultivation of its public by way of recitative seems to have been not only the model of subsequent composers of early Italian operas, but of the French operas of Lulli; that figures are often placed over the base to indicate the harmony; that the time changes are recorded both in old French and in Italian; and that the word aria occurs, it is difficult to distinguish air from recitative by any superiority of melody, except in the choruses. There is no overture to this, but a musical prologue of seven stanzas in the manner of a comic opera. To this the poet adds to his readers (a lettori), gives an account of his orchestra, which was placed behind the scenes, and consisted of a harpsichord, a large guitar, a lira grande (i.e. a viol da Gamba, according to Burney), and an arch-lute.

The Bolognese dispute with the Florentines the honour of having first produced a musical drama, but it appears that the Euridice was performed in their city the year after it had been produced at Florence. The opera was introduced at Venice in 1637, at Naples in 1646, and at Rome in 1671. The Italian Opera made its way to London by slow and cautious steps. The sudden introduction on the public stage of a foreign language, and that language delivered in recitative, would have put the sober Englishmen to a trial far too severe to be prudent; the event therefore, which was anxiously wished for by the higher orders, to whom novelty is everything, and by those who had acquired a new taste in their travels, was gradually brought about. In July, 1703, Italian imprese, or 'interludes and musical entertainments of singing and dancing,' were performed at York Buildings. Two years after, Arissina, translated from the Italian, the dialogue and narrative parts in recitative, and the singers all English, was performed at Drury Lane; the pit and boxes were allotted to subscribers. 'Before and after the opera, dances and singing, by Signora Margherita de l'Epine.' In 1706 Camilla, also a translation, was performed by the same persons in a similar manner. The next year, and a more bold advance towards the final introduction of the exotic melodrama; Thomryia, Queen of Scythia, was brought out at the same theatre, in which Urban, a castrato, and two foreign women sang their parts in Italian, the other parts were sung in English! The work was called Almehide, written wholly in Italian, and performed exclusively by foreign singers, was presented to the public at the Queen's theatre in the Haymarket. Thus the Italian Opera gained a settlement in this country; and in spite of some ridicule, and much ridicule, it was received at first attacked, soon became firmly fixed, and at length seems to be as necessary, as a source of amusement to the metropolis of this kingdom, as any other favourite and long-established entertainment.

The Italian Opera was brought into France in 1646, by Vol. XVI.—3 L
the Cardinal Mazarin, and continued for some years to be
performed at the Louvre; but the establishment of the
Académie Royale de Musique, in 1660, superseded it, and
except in 1712, when a troop of Italians represented Pergo-
lesi's Sera (Padrona as an intermezzo, between the acts of
Lulli's Actes et Galatique, it never again was heard in Paris
till introduced there early in the present century.

The grand French Opera is the legitimate melodrama,
being wholly musical, and was founded by Louis XIV. In
1669 that monarch granted letters-patent to the Sieur Perrin
for the establishment of an 'Académie Royale d'Opéra'; France
following as his pupil the Sieur Cambers as
composer, commenced his undertaking at the Théâtre de
l'Hôtel de Guise in 1671, where he produced Pomone,
the poetry by himself, and set to music by his colleague.
The French Opera, opening on the musical genius of
about thirty lines, in which the author has contrived to
stuff a greater quantity of nausious flattery of the Grand
Monarque than perhaps was ever compressed into so small a
compas. In 1672 the privilege was transferred to Lulli, who
has been composed, but Quinault, only poet of names
of their authors, Handel, Graun, Hasse, Gluck, Win-
ter, Mozart, &c.

What is called English Opera is, with two or three excep-
tions, of the mixed kind. The first that we have any account
of is Shakespeare's The History of King John, performed
by Matthew Lock, and brought out in 1673. Two years after,
Dryden wrote his Albion and Albanius, an opera, set by a
Frenchman, Louis Grubat, whom, to please the antinatal
king, Charles II., Dryden, in a preface to the work, praises
higher than the poet's own, and, with the expense of the
composers. But when that great poet wrote his King
Arthur, he was fain to apply to Purcell for assistance, whose
music has saved it from the oblivion to which it would other-
wise be condemned. The poet, in an epistle-dedicatory to this,
takes an opportunity of retracting his opinion of English
composers. He says that music had then arrived to a
greater perfection in England than ever formerly; es-
pecially passing through the artful hands of Mr. Purcell,
who has conversed with so great a genius, so that he
has nothing to fear but an ignorant ill-judging audience.'
Addison's Rosamond was, it is to be supposed, a real opera.
The dialogue in recitative. This was represented in 1707,
but failed, as Hawkins tells us, owing to the poverty of the
music. Had the opera been well provided with a
composer, the names of his opera have been firmly rooted in British ground. Arne
composed many other charming musical pieces; his Love in
a Village will never be superannuated; and in truth, if
the dramatic music of some of our countrymen who charmed
the public ear during the latter half of the last century
could be heard without prejudice, and without that uncer-
tainty after what is foreign and new which characterizes 'the
fashionable world,' and others who yield to its influence,
would be admitted that in original expressive melody we are
inferior to no nation in Europe, and may be to those who have not impartially and daily
considered the subject. [Anne; Jackson; Lamley; Draper; S.-
A.-N.; A.-G.; S.-N.]

ShIELD: ARMS: STORACE.

OPERA. [English Drama, vol. xli., p. 469.]

OPERATION, considered as a continuation of NEGATIVE AND IMPOSSIBLE QUANTITIES,
and as a development of the views of the nature of algebra
there laid down. It cannot be read entire, except by stu-
dents who have some acquaintance with the Differential
Calculus.

The great considerations on which the mathematicians
found themselves have always, until lately, been stated as those of
number and space; so that arithmetic and geometry have
been called the wings of the exact sciences. This semi-
lation, suggested by the twofold manner of its object, comparison,
can be carried a step further; for as we
will enable a bird to fly without nerves and sinews, so the
mere consideration of space and number will never make a
mathematician, without an organised method of using the
science of symbols.

We have already seen that the science of operation must be a constituent part of
mathematics; but it has always been so mixed up with the
sciences by names derived from number and measure,
that until lately it has had neither separate name nor ex-
istence. It is only to be introduced into our system that
have been in it is the mere beginning of a system.
The use of symbols of operation not standing for magni-
tude but for directions how to proceed with magnitudes
began with Leibnitz and Newton, and spread among those
colleagues, as a necessary element of human thought.
The progress of the Differential Calculus forced the attention
of mathematicians upon modes of denoting, not results of pro-
cesses, but ways of proceeding. The generalizations con-
cerning algebraical processes were expressed in terms of
the use of indefinite and arbitrary symbols of operation,

[FUNCTION.] Finally, it was observed that the symbols of
operation employed in many general theorems would give
simple and well-known relations if their meaning as symbols
of operation were reversed; and they were considered as symbols
of quantity. For example, if \( \Delta \theta \) denotes \( x(x+1) - \phi, \theta \) being a symbol, not of a quantity multi-
plying \( x, \) but of an operation to be performed upon \( x, \)
and if \( D \phi, D \phi, &c. \) denote the successive differen-
tial coefficients of \( \phi, \) Taylor's theorem gives

\[
D \phi = D_{x} \phi + \frac{1}{2} D_{x} \phi + \frac{1}{3} D_{x} \phi + \ldots.
\]

If \( \Delta \) and \( \Delta \) had stood for quantities (which they do not), the preceding equation might have been divided by \( x, \) and the result would have been

\[
D = D_{x} + \frac{1}{2} D_{x} \phi + \ldots = \ldots (A)
\]

If such a result had been obtained by those mathematicians who first ventured on the use of a negative quantity, they
would doubtless have given to operations a sort of exist-
tence as quantities, and would have felt no repugnance to say
that the direction to change \( \phi \) into \( x(x+1) - \phi \) was equivalent
to the extraction of a power of \( \phi, \) or to differentiate \( x, \) in-
hanced by a unit. This might have been best represented as
quantity (or arithmetical quantity less than nothing) in
complication of its absurdities, but not in absolute impos-
ibility. Let two persons be required, the one to take

\[
\Delta \phi
\]

out of the organisation given previously to the use of
arbitrary symbols of operation.

To say that the differential coefficient of \( \phi, \) but the direction
\( \Delta \phi \) to take the differential coefficient of \( \phi, \)
and it could be said that the first had a more hopeless task than
the second.

The modern mathematicians, with Lagrange at the
head, had had too much experience of the nature of ex-
spressions to hazard any assumption upon the properties of
symbols of operation, when separated from the quantity to
which it was applied upon. The first step made was the observation
of certain theorems involving symbols of operation to
be easily remembered by the resemblance of the form to
well-known expressions, in fact, by the collector of
those formula with the expressions, on the supposition that
the symbols of operation are changed in meaning, and become symbols of quantity. And if it be said that these mathematicians were led by intuition to a difficulty analogous to that of negative quantities by the want of resemblance to the course they might have adopted already existing in common modes of speaking and common views of arithmetic, it may be answered that such was not the case, for if it would have been easy, and was not without precedent, to consider arithmetic itself as a science of operations upon one single magnitude, the unit. If we always express the unit by I, we may, if we please, consider 2 not as I+1, but as the direction to perform upon I the operation 1-I or —I; and in this method of demonstration 3 I may represent the result of so doing: similarly 3 may be the direction to proceed as in 1-I+1-I, and 3 I its result. And 3xI would be a direction to perform 3 upon the result of 2, or to take 3x(1-I)+I, or 1-3x(1-I), or 6I. If then we say 3x(2I)=6I, we have an equation between magnitudes; but if we throw away I, as we just now did φx, we have 3x2=6, an expression of equivalence of operations. Now it might very reasonably have been asked whether these operations must not have been symbols which we should admit being treated by themselves and viewed independently of the subjects of operation; and a direct assumption of such modes of notation as that marked (A), even when Δ and D were considered independently, though it might not have been necessary for the purpose to have treated them as isolated classes of the elements of the subject, and to have found ready means of returning to well-known truths, it was natural to ask whether an application of algebra to the form (A), producing of course a transformation of both sides of the equation, by the same method of returning, another known truth might be produced. For example, assume that D and Δ are to be treated as quantities, and Δ=D−1 gives 1+Δ=D, log((1+Δ)=D, or D=D−Δ−2Δ/3 Δ−⋯.

Now restore φx to every term, and let Δ and D assume their operative meanings, so that Dφx is the differential coefficient, and Δ|x is the quantity of x having for its increment Δx. We may, we conceive, at our pleasure, x being changed into x+1 at each step. We have then

ΔφxΔx−2 ΔxΔx/3 Δ−⋯.

a theorem which must be true if the preceding method be legitimate. This theorem is found to be true by other and certain modes of demonstration: consequently the legitimate conclusions must be true; and we are disposed to favour, arising from its leading to an otherwise known truth.

In this way many theorems were investigated, upon the following plan of proceeding:—1. Throw away symbols of quantity from a known theorem, and proceed in any manner which may appear eligible with the symbols of operation, treating them as if they were quantities. 2. When a result has been obtained, restore the symbols of quantity to their old places, and those of operation to their old meanings. 3. The result as thus arrived is all the presumption in its favour which arises from its being the legitimate consequence of a method which, whether accurate or not, has never been found to lead to anything but what could otherwise be satisfactorily shown to be true. And though Lagrange himself, Arboisg, the English translators of Lacroix, Brinkley, &c. may have used language in reference to this method which would seem to imply that they considered it as one of demonstration, yet it is obvious, from the case here by themselves, that the external verification in every case, that their results were considered by themselves as resting on such a presumption as that above noted; though it is also evident that they considered the presumption as amounting to moral certainty, which indeed they were, but that it does not enter into the proof.

A student who reads on this subject for the first time, will be apt to let his ideas run farther than they should, and to imagine that this treatment of operations may be made universal. For instance, if φ=x2 and ψ=x3, and if φ+ψ be taken as representing x2+x3, he might suppose that φ+ψ performed twice, or (x2+x3)+(x2+x3), represented by (φ+ψ)2, should be the same as φ2+2φψ+ψ2, or (x2+x3)+2(x2+x3)+x2+x3.

This however will be found not to be the case, and it appears that a line of reasoning which is still nearer the distinguishing operations which may be used independently of quantities from those which may not. Until this line can be properly drawn, nothing like demonstration of the method, when true, can be given; or rather perhaps the converse, that is to say, a method of such cases that we cannot draw the line which separates those from the rest. We proceed to give some account of this method of demonstration.

We do not know how far those who used the separation of the symbols of operation and quantity (as it was called) had before their minds those views which would have made their method intelligible in a rational point of view, which was all it wanted of mathematical exactness. But, looking at their method, at their modes of expression, and we cannot find anything of the kind. Lagrange (Mem. Acad. Berlin, 1775) gave only theorems without any mode of deducing them. Arboisg assumes the 'séparation des échelles' without remark. Laplace, by the aid of his theory of generating functions, must be held to have entirely eliminated such isolated classes of the elements of the method this gives. But nothing like a general account of the reason why this separation of the symbols of operation and quantity leads to the results in certain cases, ever appeared, to our knowledge, before the publication of this Servois in the 5th volume of the 'Annales de Mathématiques,' (Lacroix, vol. iii., p. 726). The author exhibits those properties of the separable operations on which the logical foundation of this method depends; and making a separate species of calculus of functions out of those properties, fully succeeds in demonstrating that differences, differentiations, and multiplications by any factors which are independent of the variables, may be used as if their symbols of operation were completely algebraical quantities.

The last step was virtually made by Dr. Peacock, in his Algebra (1830); for though this work does not mention the subject, yet it is the first which lays down the principles on which the theory of separation is neither a resemblance of algebra, nor a calculus of functions founded on an algebra, or if the reader pleases, algebra itself; so that its conclusions rest upon the same foundation as those of ordinary algebra.

We have [Negative and Impressive Quantities, p. 132, 133] pointed out what is meant by symbolical algebra, as distinguished from explained or interpreted algebra. Granting a certain number of fundamental relations, which are to be true, the logical consequences of combining those relations must be true. But if it was found that a+b=b+a, and that x+y+y, &c. have any meaning assigned, that (a+b)x =a(x+b)=z(b+a). If, as in the article cited, we select all the primary relations on which algebraical transformations depend, and then bear in mind that the truth of all their consequences depends on the truth of those relations only, not on the relations being true for one meaning or another meaning of the symbols, but on the truth only of the relations, come how it may—whether we shall then see that all formulae of algebra may be used as expressions of truths, whatever may be the meaning of the symbols employed, provided only that, such meanings being given, the fundamental relations are true. We have already seen that this may be carried the length of extending the meanings of all the symbols of algebra, in such manner that a sequence is created with definitions wide enough to include among its rational objects not only the negative quantity, but also its square root. This was extension only (p. 134); we shall now show how it is essentially of another character. It is remarkable that all the additions which have been made to the interpretations of algebra by modern writers have been pure extensions; that is to say, in no one instance has a new interpretation been given to a symbol of which the preceding ones were not particular. It yet remains to see whether a real alteration of interpretations is possible.

In our present inquiry, we need not trouble ourselves to make any particular consideration of the signs + and −.
They retain their algebraical meaning, so that whatever \( A \) and \( B \) may stand for, \(+ (A) = +A, (-A) = -A, \&c.\)

If we now ask, what are the fundamental symmetrical relations of algebra which remain, after those which depend on \(+\) and \(-\) are taken away, we shall find them to be as follows:--

1. The **distribution** character, as it is called, of the operation \( ab \), with respect to \(+\) and \(-\), as shown in \( a(b+c-e) = ab+ac-ae \).

2. The **commutative** or **convertible** character of the same operation with respect to others of the same kind and itself, as shown in \( ab = ba = b^2 = c^2 = d^2 = e^2, \&c.\)

3. The **depressible** character of operations of the species \( a^m \), when performed upon other operations of the same kind, as shown in \( a^m a^p = a^m + (a^m) = a^m \).

These laws of operation being granted, no matter what the nature of the interpretation under which it is found possible to grant them, all that is necessary to the mechanism of algebra will be found to have been granted. It will be remembered that we speak of \( 1 \div a \) under the symbol \( a^{-1} \).

In arithmetic, as already seen, we may, if we please, consider the symbols 2, 3, \&c., as indicative of operations performed upon the unit. Let us extend this notion, and, instead of the unit, make \( x \), any function of a variable \( x \), the subject of operation; this function being always understood, if not expressed. Thus any symbol \( E \) has an operative meaning in itself, but when written in an equation stands for the result obtained by performing the operation upon \( x \), which may also be signified by \( E(x) \).

Also let \( E^3 + F \) and \( E - F \) stand for the algebraical sum and difference of the results of the operations \( E \) and \( F \) performed upon \( x \).

Let us now appropriate \( E \) to stand for the simple operation of changing \( x \) into \( x+h \), \( x+h \), \&c. and to distinguish the different increments, let \( E_x, E_y, \&c. \) denote the operations of changing \( x \) into \( x+h \), \( x+h \), \&c. It is then very easily shown that \( E \), possesses the distributive, convertible, and depressible characters essential to its being logically the object of algebraical transformation. Take the two functions \( x \) and \( x \), either assumed independently or resulting from preceding operations: it follows then that \( E(x \pm y) = E(x) \pm E(y) \), or that, which is \( E_x \), \( E_y \), \&c.

which is \( E_x \), \( E_y \), \&c.

is the distributive character of the operation \( E \) is established.

Again, consider \( E_x (E_x x) \) and \( E_y (E_y y) \): first, \( E_x x \) means \( x + a \), which on \( E_x \), or \( E_x \), becomes \( x + a \), giving \( x \pm y \); next, \( E_y y \) is \( x + h \), on which \( E_y \), being performed, gives \( (x + a) \), \( x \), \&c.

Consequently \( E_x E_y x = E_x E_y x \), or the convertible character of \( E \) is established.

Thirdly, consider \( E_x E_y \), meaning that the operation \( E_x \) having been twice performed, \( E_x \) is to be three times performed upon the result: we have evidently \( E(x + a) \), or \( E_y \); and if \( E_x \) were to be performed four times running, we should have \( E^4 \). Hence the depressible character of the successive operations is established: and, though it is a wide step for the beginner to make, the applicability of all the formulae of algebra is now proved, subject, as in common algebra, to difficulties of interpretation occurring in results.

A simplification of the preceding notation may be made as follows: let \( a \) be simply the symbol of unity, and \( E_x \) a direction to let it remain unaltered, it is clear that \( E_x x \) means \( x + a \), or \( E_x \); so that \( E_x x \) and \( E_x x \) are the same. Similar reasoning applies to \( E_x \) whenever \( E_x \) is a whole number; and shows that it is \( E_x \) and nothing else. Similar reasoning also applies to \( E_x \), where is a whole number: for \( E_x \) must be so interpreted that \( E_x \) performed upon it may give \( E_x \) or \( E_x \); that is \( E_x x \) with \( x \) or \( x \) times \( x \) must be \( E_x x \) or \( E_x x \) or \( E_x x \) must be \( x \). In like manner it may easily be shown that one of the meanings of \( E_x x \), is fractional, is \( x \), but, as in common algebra, of which all the conclusions, as shown, are applicable, when \( h \) is a fraction, \( E_x \) may be any one out of operations as many in number as there are units in the denominator of \( a \). To take a very simple case, required \( E_x (x) \), meaning an operation which, twice repeated, gives \( E_x (x+2) \), or \( (x+2) \). This condition is evidently satisfied by \( (x+2) \), but it is also satisfied by \( (x+2) \).

If, as we have done, the operation in which \( x \) is the subject of operation, stands for the preceding complex operation. Let the transformation be required to be made into a series of terms containing \( x \) and its differences: let \( E_x \) be \( x \), then \( E_x = x \), and \( E_x = x \). Consequently the preceding series is the same as
We shall now take an example of interpretation. Required the meaning of $\Delta^{-1}$ by means of $E$. Since $\Delta = E - 1$, we have $\Delta^{-1} = (E - 1)^{-1} = E^{-1} + E^{-2} + E^{-3} + \ldots$ or $\Delta^{-1} \phi x$ means $\phi(x-a) + \phi(x-2a) + \ldots$ ad infinitum.

This is easily shown to be consistent with the relation $\Delta^{-1} = 1$ or $\Delta^{1} \phi x = \phi x$, for if the preceding series be called $\phi x$, we have $\Delta^{1} \phi x = \Delta \phi x = \phi(x+1) - \phi(x-1) = \phi(x-a) + \phi(x-a) - \phi(x-2a) + \ldots = \phi x$.

As we have nothing which might not have been done with tolerable ease by common methods, nor shall we have done more in proving Taylor's Theorem, but the step which we shall make to follow that proof will be an instance of the deduction of a theorem which is of more difficult character.

Let $\phi(x+\theta) - \phi(x)$: $\theta$ be called $D_{\phi}$; then the smaller $\theta$ becomes, the more nearly is $D_{\phi} \phi x$ the differential coefficient of $\phi x$, or $\phi' x$. Let $\theta$ be the $\theta$th part of the given quantity $a$: then the smaller $\theta$ is, the greater must $n$ be. We have then

$$\phi(x+\theta) = (1 + \theta D_{\phi}) \phi x,$$

$$\phi(x+2\theta) = (1+2\theta D_{\phi}) \phi x,$$

and this is more generally true, since $\phi(x+\theta) = D_{\phi} \phi(x+\theta) + \theta D_{\phi} \phi(x+\theta)$. Proceeding in this way we obtain $\phi(x+n\theta)$ or $\phi(x+a)$

$$= (1+\theta D_{\phi})^{n} \phi x = \phi x + n \theta D_{\phi} \phi x + \frac{n(n-1)}{2} \theta^{2} D_{\phi}^{2} \phi x + \ldots$$

For $n\theta$ write $a$, and the preceding becomes

$$\phi x + D_{\phi} \phi x + a D_{\phi}^{2} \phi x + \ldots$$

which being always $\phi(x+a)$, has a limit also $\phi(x+a)$. Take that limit by diminishing $\theta$ without limit, and we see that $D_{\phi} \phi x$, $D_{\phi}^{2} \phi x$, &c., become $\phi' x$, $\phi'' x$, &c., or

$$\phi(x+a) = \phi x + \phi' x a + \phi'' x \frac{a^{2}}{2} + \ldots$$

which is Taylor's Theorem. Suppose we denote the operation of differentiation by $D$, and $\phi(x+a) - \phi x$ by $D_{\phi} x$, we have then

$$1 + \Delta = 1 + a D + \frac{a^{2}}{2} D^{2} + \ldots = a^{D}$$

A particular case of which (when $a=1$) was shown as our illustration at the beginning of this article. This relation $1 + a^{D}$ gives us a very great power of converting series which contain differences into those containing differentials, and vice versa.

We now propose to interpret $D^{-1}$. This symbol must satisfy $DD^{-1} \phi x = \phi x$, and $D^{-1} D \phi x = \phi x$, the first of which is satisfied by $D^{-1} \phi x = \phi(x+1) + C$, where $C$ may have any constant value: but the second is only satisfied by $\int \phi x dx$, beginning at a value of $x$ which makes $\phi x = 0$. We shall however see that we need not enter on this question in reference to the theorem immediately following.

Let it be required to express $\Delta^{-1} \phi x$, or $\phi(x-a) + \phi(x-2a) + \ldots$ ad inf., by means of operations of the differential and integral calculus. Since $\Delta = a^{D}$, we have to find $(a^{D})^{-1}$ expanded in powers of $D$. Now common algebraical processes show that $(a^{D})^{-1}$ can be developed in the series

$$\frac{1}{a} - \frac{1}{a^{2}} - \frac{1}{a^{3}} - \frac{1}{a^{4}} - \ldots$$

We shall use the $\frac{1}{a} - \frac{1}{a^{2}}$ when we want the integral, and $\frac{1}{a} - \frac{1}{a^{2}}$ the opposite term. The determination of the constant might in many cases be troublesome, but if we only want a finite number of terms of the series, we can avoid it altogether as follows. Let $x = t$ and suppose that $\phi(x-a) = \ldots$ ending with $\phi(x-na)$ is sought. Write $y$ instead of $x$ in the preceding, remembering that $y = x - (n+1) a$, &c., subtract the result thus obtained from the preceding, and we have

$$\phi(x-a) + \phi(x-2a) + \ldots + \phi(x-na)$$

$$= \frac{1}{a} \int \phi x dx - \frac{1}{a^{2}} \int \phi dy - \frac{1}{a^{3}} \phi x - \phi(y) - \ldots$$

But $\int \phi x dx - \int \phi dy = \int \phi x dx$ taken from $y$ to $x$, or if $\phi x$ differentiated give $\phi y$, it is $\phi x = \phi y$. For further developments of the results of this subject, see the Appendix to the Translation of Lacroix; Herchel's 'Examples of the Calculus of Differences,' Lacroix's large work on the Differential Calculus, vol. iii.; 'Library of Useful Knowledge—Differential Calculus'; a paper by Mr. Murphy in the Phil. Trans. for 1837; and various papers in the numbers of the 'Cambridge Mathematical Journal.' In several of these works further references will be found. The student may make an attempt at the demonstration of the following theorem: a test of his understanding the method which we have explained, and the point of analysis which are much the most essential as preliminaries. Whatever a may be, the differential coefficient of $\phi x$ is an algebraic equivalent of the following series:

$$\frac{\phi(x-a) - \phi(x-a)}{a} + \frac{\phi(x+2a) - \phi(x-2a)}{2a}$$

Instead of supposing $\phi x$, a function of $x$ only, to be the fundamental subject of operations, we may make $\phi(x, x)$ and suppose $E$ and $E'$ to represent the operations of changing $x$ into $x+a$ and $x$, into $x+a$. We can only

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$a$ We transfer this word, with extension of meaning, to the calculus of operations.

$b$ We have examined these numbers, and find them to contain no variation from the authorities cited.
briefly note some of the results of this extension. If $D$ and $E$ represent the operations of differentiation with respect to $x$ and to $y$, we have in

$$EE = e^{D+F} = 1 + (aD + aD) + \ldots .$$

the means of obtaining the common extension of Taylor's Theorem to a function of two variables. Again, if we take $D$ and let $D$ and $E$ in the development of $D+D$, $F \neq y$, the formula for forming the $n$th differential coefficient of the product.

Since writing the above, we have found in the collection of Abel's works (vol. ii. p. 7) a paper in which this subject is treated on a foundation which, though limited, is peculiar and elegant. It is a theory of generating functions, in which

$$\phi x = \int e^{\bar{x}} f(x) dx,$$

the limits being fixed, is called the determinant of $\phi$. The legitimacy of the separations made in this article is very easily deduced.

OPERCULIFERA, one of the families of Polyopiaeaeae Membranae of Blainville, also called Escharia. [Polyopiaeaeae Membranaeae.]

OPERCULUM (Foraminifera, vol. x., p. 348.)

OPERCULUM (Malacology). The plates or pieces which protect the apertures or exposed parts of certain mollusks. In many of the testaceous gastropods it becomes a cover or door, which fits the aperture of the shell, and which of course, when the animal has retired within it. Opeculum of this kind vary much in structure and shape. Thus they are sometimes horny, as in Trochus and Murex; sometimes shelly, nay almost stony, as in Turbo; and in construction they are for the most part either spiral, concentric, or unguiculate. The operculum of opercular valves of the Ciburipds are figured and described in the articles Balanus and Cerithiida.

OPERCULUM, in Botany this term is chiefly used for the cap which forms the upper extremity of the ovum, or spermium, of a mule, covering over the perianth, and usually falling off when the spores are ready for dispersion. [Mosses.]

It has also been applied to the lid which covers in the Pitcher of Nepenthes, where it is the lobe of a modified leaf. [Pitcher Plants.]

OPHICLEIDE (Opus, a serpent or snake, and elion, a key), a musical instrument of the infallite kind, made of brass or copper, and intended to supersede the Serpent—if of which it is a decided improvement—in the orchestra and in military bands. It is a conical tube, the longest near four feet in length, terminating in a bell, like the horn. It has ten ventages, or holes, all of which are stopped by keys, similar to those of the bassoon, only of larger dimensions, and is furnished with the same kind of mouth-piece as the Serpent. The scale of the base Ophicleide is from $a$, the third space below the base staff, to $c$, the fifth added space above it.

including every tone and semitone within this compass. Music for the Ophicleide is written in the base clef; for the alto, or ophicleide quint, in the treble clef. When the two instruments play together, the music for the alto is written an octave higher than that for the base.

The Ophicleide is quite a new invention, ascribed to M. Labaye, who invented it and set it in the northern sovereigns, when the troops of the allies occupied Paris. M. Labaye, a manufacturer of musical instruments in that city, added new keys to it, and otherwise much extended its capabilities; besides which, he discovered a better method of constructing the tube than had been practised, and thus greatly ameliorated its tone. These improvements were reported to the French Society of Arts in 1821, by M. Francœur, in consequence of which Labaye obtained a patent for five years. The Ophicleide first reached England in 1824, one of extraordinary dimensions having been manufactured abroad for the Birmingham Musical Festival of that year. In the Supplement to the Musical Library for November, 1834, it is thus mentioned—

'A new instrument, the Double-Bass Ophicleide, made for this festival, and now first introduced into England, proved extremely useful in the musical service of the orchestra, where its strength was required. The volume of sound it emits is immense, but the tone is rich, round, and blends well with the voices. We are much deceived if this instrument is not destined to operate a great change in the constitution of music, and though the cost will be at first rather expensive, it will be found with any four double-basses, and is well calculated to form a third part to the bassoons, which has long been a desideratum. As a contra-bass to the trombones, it will not be found less useful. This prognostic has proved correct; the instrument is now becoming indispensable.'

OPHIDIANS. [Serpents.]

OPHIODES, Wagler's name for a genus of Scincoid Lizards (Pygopus, Spix; Bipes, part. Cutier; and Pyxidactylus, Fawngler and Wagler—according to M.M. Dumesühr and Bibron). [Scincoida.

OPHIMORUS, a genus established by M.M. Dumesühr and Bibron for a form placed by them in their first subfamily (Saurophalambus) of Scincoid Lizards.

Ophidian.—Numerous bones, with interlocking between two plates, viz. the nasal and supranasal. Tongue flat, arrow-headed in shape, slaty, and slightly notched at the point. Teeth conical, obtuse, and erect. Palate not toothed, and with a longitudinal groove. Body angular. Tail long, cylindrical, and posteriorly constricted. This genus is distinguished from the Ophets (Ophuanda), 1st, by their teeth, which are not so long in proportion, nor so slender, neither are they directed backwards; 2nd, by the tongue, which is hardly notched at the point, and offers several ridges; 3rd, they have a reverse furrow. It is furnished with only one sort of papille over its whole surface, and they are flattened and imbricated from before backwards like scales; 3rd, by their nostrils, which do not terminate in the middle of a small plate, but between the nasal and supranasal, which are rather large. There is a mentalia auditorius, but as small and as difficult to perceive as that of the Ophets.

Example, Ophiomorus milarius. Total length 17. Yelloish brown, grey at the lower parts which with many rows of very small black points; those on the sides being generally more dilated and thicker together than those on the back and belly.

Localities.—The Morea and 'Algérie' (Dumersühr and Bibron, who add however that the name, as the form, like many other Herpetological productions of these countries, is found in South Russia, where it was observed by Pallis). See Ophiodorchesmi, the name assigned by M.M. Dumersühr and Bibron to their second subfamily of Scincoid Lizards, having all naked eyes, but only one of them (Gymnophuthalbus quadrilitemus) being completely without the eyelid. In the others there exists a rudiment surrounding the orbit either entirely or in part, under the form of a ring or semiring, often very narrow and invisible, sometimes rather enlarged at the upper part, and susceptible of being folded back under the orbital border, or of advancing a little upon the eye-ball, as in some species of Alephoraa. The genera placed by the authors above quoted under the Ophiodorchesmi vary however in this respect not numerous. The former are Alephoraa, Gymnophuthalbus, Lelista, Hysterosa, and Liaia.

Ophipops, a name given by M. Ménestriciés to a genus of Lacertians (Priscadactylia, Codolotes of Dumersühr and Bibron, Amytus of Wiegmann).

Generic Character.—Tongue arrow-headed in shape, moderately long, notched at the end, covered with imbricated squamiform papille. Intermaxillary teeth conical, simple. Maxillary teeth, conical, and added to by the coronal upper, the anterior triangular, and the posterior tricuspidate. Simple slightly convex, not interlocked, and between which is found the nostril situated on the line of the canthus rostralis. No eyelids. A tympanic membrane extended within the auricular opening. No scalp collar under the neck. No spurs on the shoulder. Ventral lamelle quadrilateral, smooth, and disposed quincunxially. Femoral pore. Feet with toes slightly compressed, carinated below, but not deminated laterally. Tail cyclopentagonal at its root, but rounded throughout the rest of its length.
MM. Doméril and Bibron remark that the principal character of this genus is the absence of eyelids, a condition which distinguishes it from all the other known Pterodactylus Calodonta.

Example, Ophioscopus elegans (Mén.)—Amytes Ehrenbergii. Wiegr. Olive or browned above. Two yellowish lines extend along each side of the trunk; each of these yellowish or whitish lines separates two rows of black spots, which are small and very distinct in young individuals, but are more or less dilated and confused in adults. White below. Locality.— Smyrna; Bakou.

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OPHIR (Ὀφίρ), a place which was known to the Hebrews and to the neighbouring nations, as early as the time of Job, as producing such an abundance of excellent gold, that 'the gold of Ophir' became a proverbial expression for fine gold. (1 Chron. xxiii. 4; Job, xxi. 24; xviii. 16; Psalms, xiv. 9; Lev. xiv. 12.) The position of this place is very difficult to determine. We are informed that Solomon, in conjunction with Hiram, king of Tyre, sent a navy from Ezion-geber, at the head of the Red Sea, to Ophir, and that this navy returned bringing four hundred and twenty (in Chronicles 450) talents of gold, sandal-wood (called in our translation alnug or alnug trees), and precious stones (1 Kings, ix. 22-28; x. 11, compared with 2 Chron. vii. 17-18; ix. 10; and also that Jehoshaphat built ships of Tarshish to go to Ophir for gold (in Chronicles it is said that he built ships to go to Tarshish), which were wrecked at Ezion-geber. (1 Kings, xxii. 48, 49, compared with 2 Chron. xx. 30, 37.) We are also told in 1 Kings, x. 22, that Solomon had at sea a navy of Tarshish with the navy of Hiram; once in three years (or every third year) came the navy of Tarshish, bringing gold and silver, ivory, and apes, and peacocks.

Now since both Solomon and Jehoshaphat built the navies bound for Ophir at Ezion-geber, at the head of the Red Sea, it is clear that we must seek for Ophir somewhere on the shores of the Indian Ocean, for it is highly improbable that Solomon's ships went farther than the Cape of Good Hope in one direction, or than the Indian Archipelago in the other: it is not likely indeed that they went so far either way. Nearly all the inquiries into the position of this place have proceeded on the assumption that the passage in 1 Kings, x. 22, refers to the same navy which is spoken of in 1 Kings, ix. 27, 28, 30, and consequently that Tarshish and Ophir were visited in the same voyage. It has therefore been necessary for those who make this assumption not only to find a place which suits the description of Ophir, and which produces 'golden stones,' but also to account for the 'silver, ivory, apes, and peacocks,' which were brought by the navy of Tarshish, and for the three years consumed in the voyage. But Tarshish was probably the same place as Tartessus in Spain, and therefore if Tarshish and Ophir are to be connected, we must make the gratuitous supposition that there was another Tarshish in the East. [Tarshish.] Besides, Tarshish and Ophir are not mentioned together in the account of Solomon's voyages; the ships that went to Ophir (1 Kings, ix. ix. 20) seem to have made only one voyage for the purpose of fetching a specified quantity of gold, while the 'navy of Tarshish' which 'the king had' (not going to Ophir, but 'at sea' made its voyage every three years; and moreover the products of the voyages were different, gold being the only article common to the two. For these reasons we think Major Rennell correct in saying 'that two distinct kinds of voyages were performed by these fleets: that to Ophir from the Red Sea; and that to the coast of Guinea' (or to Tarshish, wherever it was) 'from the Mediterranean.' (Rennell's Geography of Herodotus, vol. ii., p. 353.) The conjectural mention of Ophir and Tarshish in the account of Jehoshaphat's navy admits of easy explanation; either there may be some mistake in the account in 2 Chron. xxx. 36, 37, which differs materially from 1 Kings, xxii. 48, 49, or 'Tarshish' in the former passage may mean only a distant voyage, and we know that the phrase in the latter passage, 'ships of Tarshish,' is frequently used in the Old Testament for large ships. The question then reduces to the position of Ophir mentioned in this passage, whether it be to be ascribed to any of the several probabilities."
deep lateral furrows. No fold across the lower surface of the neck.

This form is one of those transitions by which nature passes from one type to another. The animal, in effect, has the head of a Lizard on a serpentine body. There appears to be but one species, viz. Anguis ventralis, Linn.; The Glass Snake, Caelica muculata, Catesby.

**Description.**—Colour yellowish green, spotted with black above. Tail longer than the body. Head very small, and the tongue of a singular form, according to Catesby.

![Head of Ophiasaurus ventralis](image)

It is probable that this species is subject to slight variations of colour. Catesby says that the upper part of the body is of a colour blended brown and green, most regularly and elegantly spotted with yellow; the belly yellow, the undermost part of which is brightest. Their skin is very smooth and shining, with smaller scales more closely connected, and of a different structure from other serpents. General length about eighteen inches.

The fragility of this animal equals if it does not exceed that of the Blindworm; and hence, probably, its name of Serpent de Verre, or Glass Snake. The author last quoted says, 'a small blow with a stick will cause the body to separate, not only at the place struck, but at two or three other places; the muscles being articulated in a singular manner, quite through to the vertebrae. They are generally said to be harmless.' There is no doubt that the species is innocuous.

**Geographical Distribution.**—The Southern United States. Catesby states that the Glass Snakes appear earlier in the spring than any other serpent, and that they are numerous in the sandy woods of Virginia and Carolina.

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**OPHIUCHUS** (the Serpent-bearer), one of the old constellations, representing a man holding a serpent, which is turned about him. But the moderns make a separate constellation of the serpent. [Serpenes.] Ophiuchus has also been called Anguinaeus and Serpentarii. The figure of the man rests his feet upon the back of Scorpio, and is surrounded by Leo, Libra, Boötes, Corona, Hercules, and Aquila. It is not a constellation of any note, containing no star of the first, and one only of the second magnitude.

The number and insignificance of the mythological traditions connected with it are rendered less surprising by this paucity of remarkable stars, since the latter is a presumption that the constellation itself is of a later date than Orion or Ursa Major.

The following is a list of the principal stars: it will be observed that the letters o, p, q, and r, have been given twice; the second is in all three cases the star so designated by Flamsteed.

**Asterophydea.**

**Body small, disciform, very much flattened, the circumference furnished with appendages more or less elongated serpentina form, squamous, and without inferior furrows.**

The organization of this family differs in many particulars:

* g of Flamsteed.
* p erroneously called p by Flamsteed.
* q compared by Flamsteed, but probably c of Bayer.
* This letter was given because Flamsteed had erroneously supposed t = c of Bayer.
* Neither this nor any other star agrees with A in Bayer's map.

**Ophiura**, Lamarck's name for a genus of Star-fish. M. de Blainville makes it the first genus (Euryale) of the other of his Asterophydea, or more correctly, Asterophydea, the second family of his Stelleridea (Asterophydea, Linn.)

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* Neither this nor any other star agrees with A in Bayer's map.
* Flamsteed's Ophiuchus is also his 31 Serpent.
* flamsteed, Flamsteed's Ophiuchus does not exist, but is an error of 31 Scorpi.
from that of the true Astaria; and there is also a difference in their habits.

Ophiura.

Body discoid, depressed, rather small, subquinquelobate, covered with a coriaceous skin, and provided at its circumference with five simple, very long, very slender, squamous rays, without any trace of an inferior furrow, but always accompanied laterally with spines more or less moveable, and with two rows only of large cirri, or suckers, one on each side below.

Mouth in the midst of five very short slits, not exceeding the demi-diameter of the body, and furnished with a few papilliform suckers (eight), and on the edges with five groups of scales, which are often dentiform.

Orifices of the ovaries very large, in the shape of a slit on each side of the root of the rays. No madreporiform tubercle. (Blainv.)

Species the spines of whose rays are very short and applied (appliques).

Example, Ophiura texturata. (Stella lacertosa, Link.)

Description.—Brownish or brownish white; rays smoothly subulate; the scales on the lower surface disposed trifurcately; the papillae of the sides very small and adpressed.

Geographical Distribution.—The European Seas. Lamarck adds the Atlantic Ocean. It was taken very abundantly in the trawl in Davis's Strait in Sir Edward Parry's first voyage; and occurs on the British coasts.

Ophiura texturata

a, front; b, back; c, portion of centree and arm magnified (front); d, the same (back).

Ophiura annulosa.

Species the spines of whose rays are long, and not applied.

Examples, Ophiura annulosa and Ophiura granulata.

Ophiura annulosa.

Description.—Brownish, rays long, smoothly subulate, spinous at the sides, the spines annulose, and subadpressed; back of the disk echinulate.

Geographical Distribution.—Australasia; first made known apparently by the voyage of Péron and Le Sueur.

Ophiura granulata (Ophiura echinata, Lam., Stella granulata, Link.).

View of back (principal figure). a, Portion of arm, under side, magnified b, the same, upper side, c, front view of centree.

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Description.—Blackish; disk granulated above; rays echinato-spinose; spines thick, rather longer than the width of the rays.

Geographical Distribution.—European seas, those of the West Indies, the Atlantic, &c.

M. de Blainville states that he has made observations on three species at least of this genus in the three seas which bathe the coasts of France. The genus, he observes, is evidently very distinct from that of the true Asterias both in the singular disposition of the appendages of the body and from the absence of the madreporiform tubercle. The mouth is also much more efficiently armed in consequence of the manner in which the spines or tubercles unite at the angles of the interstitial spaces of the mouth, so as to form a kind of teeth as thick as the body itself. The eggs are united in considerable oviform masses.

M. de Blainville is further of opinion that the best characters are to be drawn from the number and the length of the lateral spines of the rays, and perhaps from the proportion of these last compared with the diameter of the body; and better still by the disposition and number of the rows of plates which cover the rays. This last appears to him the most certain, and is that to which he has had recourse in his monograph.

Geographical Distribution.—Very general; hardly any seas are without species of this genus; and there are many in those of Europe, though M. de Blainville thinks that zoologists have exaggerated the number.

Habits.—The Ophiura swim and creep often with much facility in all directions, agitating the appendages of the arms in a serpent-like manner.

Euryale. (Astrophyton, Link; Gorgonocephalus, Leach.)

Body regular, depressed, rather small, pentagonal, provided with five appendages or rays rounded above, flattened below, dividing, dichotomizing, and attenuating more and more to the extremities, which are circular.

Mouth at the centre of five converging furrows, in form of holes, not extending to the circumference of the body, and bordered with papilliform suckers. (Blainv.)

Euryale costosa. (Astrophyton costosum, Link.)

Description.—Back of the disk with ten unarmed ribs a pair, truncate at the apex; rays dichotomous, very round and transversely rugose.

Geographical Distribution.—Seas of America.

Habits.—M. de Blainville remarks that he is known to an author who has observed and has published his observations; but it is nevertheless true that these animals make use of the cirri of their rays to entrap their prey and bring it to the mouth; that they defend strongly by their upper disk, and that it is even difficult to detach them. We have often seen them clinging to their arms to the branches of Gorgonia, &c., and such specimens are to be found in most museums.
eyelids, the blood-vessels (which are naturally invisible) appearing swollen and tortuous, and making the front of the eye what is commonly called blood-shot; swelling of the eyelids and increased thickness and puffiness of the conjunctiva of the ball; and an increased secretion of opaque white or yellow tenacious mucus which agglutinates the eyelids. The pain is seldom acute, except in severe cases, in which it has a peculiar character, as if there were dust or fine sand rubbing between the eyelids. There is rarely any intolerance of light or any constitutional af-

In this, the common inflammation of the eyes, no active means need be employed. In the most severe cases, blood should be taken from the arm; but in general, the application of leeches, cooling lotions applied to the eyes, and mild purgatives or sweating medicines, are sufficient for the removal of the inflammation, which, as it does not affect a part directly important to vision nor spread beyond the tissue first affected, rarely leaves any inconvenience behind. In the mild cases of this kind, a lotion composed of two grains of sulphate of zinc to the ounce of water is the best, and generally a sufficient remedy; the eyes should be washed with it three times a day.

That which is commonly called purulent ophthalmia is a much more serious form of inflammation of the conjunctiva. It was observed in its greatest severity in the European armies engaged in Napoleon's campaign in Egypt, and is therefore sometimes called Egyptian ophthalmia; and from its appearing to spread from one individual to another by the contact of the purulent matter secreted by the inflamed eyes, it has also received the name of contagious ophthalmia. In this form, which has often appeared as an epidemic,* and is generally acknowledged to be liable to spread by contagion, all the symptoms of the preceding are greatly aggravated. The conjunctiva is intensely red, and so swollen that it is raised in a deep ring round the cornea, whose edges it overlaps so as almost totally to obstruct the sight. The conjunctiva of the eyelids is at the same time excessively inflamed, and by effusion into their loose cellular tissue they often become so distressed that they completely cover the front of the eye. A considerable quantity of acrid yellow purulent discharge constantly flows between the eyelids, producing excoriations of them and of the cheeks. The pain is often extremely acute, vividly smarting, or hot and burning, and is accompanied by some intolerance of light. From the conjunctiva, which in this form affects, the purulent ophthalmia spreads to the other tissues of the eye; producing ulceration and sloughing, or excessive opacity of the cornea, and all the worst results of inflammation of the several tissues, even to suppuration and destruction of the whole of one or both eyes.

The treatment of this form of ophthalmia must be active in proportion to the rapidity of its destructive effects when unchecked. Large bleedings, both general and local, should be employed, and repeated till the inflammation is evidently reduced; and purgatives and the various other antiphlogistic means should be administered, as in the treatment of an acute inflammation of the most vitally important organ. When the inflammation is somewhat checked, the greatest benefit is derived from the application of powerful astrin-

gents to the eye, a mode of treatment which may be adopted with equal advantage in these and in the severer cases of catarrhal ophthalmia. The best material is a solu-
tion of ferric to four grains of lunar caustic in of water; of which one or two drops should be let fall into the eyes once or twice a day, according to the severity of the inflammation. This remedy produces considerable pain for a short time after its application, but is generally produc-
tive of the most beneficial result.  

One of the most common effects of the purulent ophthalmia, when prevented by active treatment from producing its worst results, is a thickening and roughness of the inflamed lining of the eyelids, to which the name of granular con-

* A severe epidemic of purulent ophthalmia is now raging in the Belgian army. It first appeared in 1814, but it is chiefly since 1830 that it has raged with such terrible severity. It has attacked every extreme infantry and has destroyed from 15 to 20 per cent. or more of the men. The Report on the ophthalmia of the Belgian army, recently presented to the French Academy of Medicine, by M. Callu, in their Bulletin of January 18, 1860.
The conjunctiva is given. The affected surface looks like that of a florid ulcer, and the friction of its irregularities upon the free edge of the lid keeps up a constant irritation of which the common consequence is a complete opacity of the cornea. The granular conjunctiva may be treated by the application of powerful astringents or caustics; the most efficient, though a severe remedy, is to rub the rough surface of sulphur. The conjunctiva is so swollen that they obscure the front of the eye. Its severest form may be suspected when the upper eyelid is much swollen and is externally of a bright red colour. The treatment must be similar in its principles to that of the corresponding disease in the adult; in severe cases a leech should be applied to the temples and purgatives should be administered in all; and when the inflammation is somewhat relieved, or from the first, if it be not very severe, astringents should be directed into the eyes, and the best form is composed of from two to ten grains of alum in an ounce of water, beginning with the smaller quantity and gradually increasing the strength.

Another form of inflammation of the conjunctiva is that called opthalmia. Infants in children of scrofulous habit, and is chiefly remarkable for the extreme intolerance of light by which it is accompanied. The patient cannot be induced to open the eyes, or even to raise them to the light, but keeps his head down, with the eyes pressed together upon the ball of the eye, and carefully covered with his hands or his clothes. The degree of inflammation is by no means proportionate to the severity of this symptom; the conjunctiva is usually only a little reddened. In the worst cases little white elevations are observed upon the edges of the cornea. The treatment of these cases is chiefly that adapted for the constitutional disorder on which their peculiarities depend. [Schofield.]

Pure air and exercise, mild aperients and tonics, and especially bark and iodine, should be administered, and the general health should be carefully attended to. In the earlier stages a few leeches may be applied, but afterwards counter-irritation by blisters placed behind the ears, or by turpentine rubbed, with the head down, is the most useful. Slighty astringent lotions may also be applied to the eyes, and the ulcers or little pustules on the cornea touched with the solid nitrate of silver (lunar caustic).

The characters of inflammation of the sclerotica are very different from those of inflamation of the conjunctiva; very often the two affections are coincident, so that the appearances belonging to each are confounded. In scleritis, as this form of opthalmia is sometimes called, the redness of the eye is a rose-pink or violet tinge, rather than the scarlet hue which is seen in the preceding form; for the distended vessels are fewer and smaller, and are to a certain extent obscured by the conjunctiva, beneath which they lie. This redness is most intense in a zone around the cornea, at which the enlarged vessels are concentrated like rays, and from whose outer border the redness diminishes in brightness till it is nearly lost at the angles of the eye; and by this circumstance sclerotica is further distinguished from inflammation of the conjunctiva, in which the redness increases with the distance from the cornea. In scleritis there is always considerable pain of a dull heavy kind, which often extends all round the orbit, or over the forehead and head, and is accompanied by intolerance of light and a profuse secretion of mucus or tears, as in the preceding cases, but of hot tears. The pain is very often aggravated in the evening, or throughout the night.

The treatment of inflammation of the sclerotica must, as far as general means are concerned, be the same as for acute inflammation of the conjunctiva; and the astringents or stimulants is useless, and sometimes injurious; the vapour of hot water and other warm fomentations are the local means which are most agreeable to the patient. The moderate use of mercury is generally useful. In rheumatic and gouty conditions of the system, with which this form of opthalmia is often connected, and is then called rheumatic or arthritic opthalmia, the treatment adapted to the general system is the proper means.

Infiammation of the cornea, cornæa, or keratitis, is a very generally connected with some degree of inflammation of the conjunctiva, from which it is derived. That part of the inflammation of all the deep-seated tissues, viz. dull pain, intolerance of light, and profuse discharge of hot burning tears; at the same time a few vessels passing inward from the red free edge of the lid. The conjunctiva is then so wreathed, its transparency and becomes hazy, or assumes a grayish and often an opaque chalky-white hue, from the deposition of lymph between its laminae. [Lucocma.]

In very severe cases suppuration takes place in the cornæa, and a sequelae adhere to the lid, as well as to the inner face of the anterior chamber [hypho]. The cornea is perforated by ulcers and the iris protrudes; and it sloughs and becomes soft and weak, so that staphyloma is produced.

The treatment of cornæa in its acute state is the same as that for inflammation of the sclerotica. After the inflammation is subdued, its effects (which the situation of the cornæa renders peculiarly important) admit of but little useful treatment. The opacity which remains, when it is a sequel of inflammation of the conjunctiva, may be in some degree assisted by the application of a weak solution of nitrate of silver or some other stimulant; the ulceraions generally proceed best when left to themselves, the ulcers which they leave being gradually filled up, and their surfaces being exchanged for a grey or bluish colour; the more serious effects, such as staphyloma, extensive heemorrhage, sloughing, protrusion of the iris, &c, are irredeemable.

Infiammation of the iris has already been treated of. [Iritis.]

Infiammation of the membrane of the aqueous humour is not uncommon in young persons; it is marked by dullness and haziness of the cornea (which is surrounded by the usual redness of the conjunctiva), an alteration in the colour of the iris, which assumes a dull reddish hue, and a turbid or purulent appearance of the aqueous humour, with, in some cases, hypopyon. The proper treatment does not differ essentially from that of inflammation of the irs or sclerotica, with which this form of opthalmia, like all the affections of the deep-seated tissues of the eye, is very generally conjoined.

The inflammations of the parts of the eye which are most liable to disease are much rarer than any of the preceding; their symptoms also are much obscure, and are seldom found combined with those of some other form of opthalmia. Their signs are similar to those of the inflammation of the sclerotica and cornæa; but the intolerance of light and the conjunctiva are not so often effects which arise from the degree of inflammation which exists in the visible tissues. The treatment must be similar to that for the acute inflammation of the irs or cornæa, and be active administered for the nature of the parts affected renders the least disorganization of them the highest importance.

All kinds of opthalmia may either become chronic after having existed for some time as acute diseases, or may chronic from their commencement. Their symptoms in either case differ only in degree from those of the corresponding acute forms, and the treatment of them should be the same in principle, though less active. Counter-irritation by blisters or other means, applied to the neighbourhood of the eye, or scions in the back of the neck, are among the most useful means; and of the milder forms of astringent lotions, the nitrum opii is the best for all the most superficially seated of the chronic opthalmias.
him up to his own trade, his father was much more disposed to check what he considered an idle boyish pastime than to encourage it. He was not to be deterred by his father’s disapprobation; he began to take likenesses of his relations and neighbours, the fame of which productions caused him to be regarded as a prodigy, and attracted the notice of Dr. John Trostgedicht, an eminent German portrait-painter, who took Opie into his house in the double capacity of his protégé and his footboy. How long he remained beneath this roof is not known, nor what immediately led to his quitting it. Opie afterwards came to the museum in the doctor’s immediate care and protection. In the time between leaving his service and coming up to town, he pursued his art as an itinerant portrait-painter, and with such success, though his charges never amount to the value of any gold coin, he was able not only to make a smart appearance, but to remit money to his mother.

On arriving at London with Wolcot (1781), he was introduced to Sir J. Reynolds, whom he found more liberal of advice than lavish of expressions of astonishment at the talents of an untutored lad. Wolcot’s object however was to secure immediate fame for his protégé as a miraculous genius, and distinction for himself as a discriminating and moral patron.

Aware that the public are always ready to meet any novelty or wonder more than half way, the doctor took his measures accordingly, and with such success, that within a very short time his Cornish lad became almost the rage among the fashionable. Visitors flocked about him, thronged around him, that their carriages literally crowded the street where he resided. But people cannot wonder for ever: the fever of fashionable admiration subsided almost at once, and it had come to pass that Opie was absolutely left all at once without sitters, but his father contemptuously asserted — public curiosity had been gratified. In fact he was fitted to become a permanent favourite with the fashionable; there was nothing engaging in his person and address, no quality to stir up his or his patron’s fancy. He possessed much more of vigour and homely truth than of grace and artificial refinement; and he succeeded far better with male heads and strongly marked countenances than with females and with pretty faces. When it had subsided, however, the tide of fashionable patronage left him in comfortable circumstances. He further sought to establish his independence by marrying the daughter of a wealthy pawnbroker, but the match proved a most unhappy one, and he was driven to obtain divorce. In 1793 he married his second wife, the daughter of Alderson, a physician at Norwich. In this lady, who subsequently became one of the most popular novelists of the day, he found an intellectual companion and judicious assistant.

Instead of abandoning portrait-painting on the discouragement immediately following his first success, Opie divided his attention between that and historical painting, in which latter his best known productions are — The Murder of James I. of Scotland; the Death of David Rizzio; Arthur taken prisoner; Hubert and Arthur; Belisarius; Juliet in the garden, &c. None of these works affect ideal beauty or refined poetical conception, but they are stamped by a peculiar energy of style, and by a vivid reality, for instead of attending to conventional beauties, the artist adhered closely to his models; one fortunate consequence of which was the striking and remarkable truth of his colouring.

Opie’s education had been exceedingly limited, and was in no degree a literary one. Sensible of his deficiency in that respect, he sought to repair it in after-life by studying the best English authors, and having a clear judgment and a strong memory, distinguished himself in conversation by his facility of thought. He qualified himself at the shore of ship painting at the Royal Academy, having previously delivered a course of lectures at the British Institution; but he withdrew on finding himself opposed by Fuseli. When the latter was about to publish his treatise on painting, Opie again offered himself as candidate, and was chosen. He delivered only four lectures (afterwards published by his widow), in the months of February and March, 1807. On the 9th of the following April he died, and was buried on the 20th in St. Paul’s cathedral, near Sir J. Reynolds.
OPI

year. Owing to the fear of contagion, his papers and manuscripts were put away and irrecoverably lost.

His published works have sufficiently attested the im-
pact he made. He published for German literature, more especially as regards the language and its mechanical struc-
ture. As a poet he can be considered great only by compa-
rison with his predecessors and contemporaries. Though
strongly marked by the time and the feelings of his age, he
left us a valuable combination of the qualities of expres-
sion, and occasionally great felicity of expression,
there is more of the orator than of the poet in his com-
positions; more of elaborate study and sound judgment than
imagination and vision. Still he ranked amongst the best ex-
samples to the literature of his country; and but for his labours
in refining the language, the poets of the eighteenth
century would have had to contend with nearly all the difficul-
ties which the labours of Opiz had helped to remove.
Opiz succeeded best in moral and didactic subjects, such as
his 'Preis der Gemuthserthe,' "Vielgr.," etc. Among his
lyric productions his version of the Psalms contains some of
his most successful efforts. His prose style has also much
merit, and recommends him as a style, which is characterized
by precision, and clearness, in which respect his translation of
Barclay's "Argenis" (1636) is a masterpiece, considering
in what condition the language was at the time when it was
produced.

OPIN. [PAPAYER.]

OPIUM TRADE. The cultivation, mode of preparing,
and medical properties of opium, are treated of under
Papaver in the present notice we shall confine our atten-
tion to the consumption and commerce of opium.

The opium poppy is cultivated in the countries in which
are medicated are India, Turkey, and Persia. The poppy is cultivated
in Egypt and Arabia; in Italy, France, and several other parts of Europe; but, with the exception of the two former
countries, the opium is of the same species and is extracted from its seeds than for the stimulated juice. Indian
opium is distinguished into two kinds, the Patna,
grown in the province of Bahar, and that grown in the
province of Benares, the former of which is the most esteemed. The opium grown in the district of Malwa is less
esteemed than that of Benares, being, it is said, not so 'pleasant,' and the flavour less 'mellow;' and the best Indian
opium is inferior to that of Turkey. For some time the quan-
tity of opium produced and brought to the Eastern markets
from these countries was not equal to the demand, and the Malwa
and Turkish opium were introduced to supply the deficiency.
At first there was a strong prejudice against the latter.
The Turkey opium was introduced into the Indian Archi-
pelago in 1782, and in three years it was carried into China. The price at which the merchants reluctantly consented to
its constituting one-fourth of the supply for the year; but
two years afterwards they expressly stipulated for one-half,
and in the following year for three-fourths, although the
price rose, while Indian opium was stationary. A strong
preference has always been shown for the Indian opium, which
has been introduced by the Americans. The annual
imports of Turkey opium into China are estimated at
about 1500 chests. Several thousand persons are engaged in
the cultivation in Turkey. They are generally very poor,
and the quantity annually brought to market by each culture
tor does not usually exceed one or two baskets. The annual
average produce of Turkey is estimated at 3000 baskets, or
about 400,000 lbs., equal in weight to 2666 chests of the
Indian opium. The whole quantity of land under the poppy
cultivation in India is said not to exceed 50,000 acres;
perhaps about as many persons are employed in the cultiva-
tion. It is under a strict monopoly, and the advances made
by the government are a great inducement to the peasant
to engage in the cultivation. Milburn (Oriental Comerce, p.
294) gives the following account of the opium monopoly:

'The monopoly in the trade of opium, or the cultivation of the
poppy, may be traced at least as far back as the com-
 mencement of the British influence in Bengal. The advan-
tages claimed for it were, that it would form a valuable
source of revenue, and that it would furnish employment to
the sepoys, and increase the power of the government.
In the year 1773 it was taken out of their hands, and the
profit of the trade assumed for the benefit of the govern-
ment. The monopoly was continued during nearly all
the years of the presidency, and the right to it was sold
by public auction. The opium was required to be sold
under the direction of the Board of Revenue till 1793, when
it was transferred to the Board of Trade. On the expi-
rations of the contracts, in 1797, the cultivation of opium
was restricted to Bahar and Benares, and discontinued in
Bengal; the mode of provision by agency was restored to,
and still continues in practice. In July, 1795, some regu-
lations were published by which the opium trade was im-
periled. The monopoly is now supposed to be over,
and the whole amount of opium produced is not now
concerned in the provision of opium on the part of govern-
ment, and for preventing the illicit cultivation of the poppy
and the illicit importation or traffic in the article of opium.
Under these regulations, which were further modified in
1807, the cultivation of the poppy, except on account of
opium, is expressly forbidden; but it is left entirely at
the option of the cultivator to enter into engagements to
furnish the government with the poppy at a fixed price,
or to receive a bounty for it. The quantity of opium, which
is limited, is sold by annual auction, and in the months of
December, January, and February.' The monopoly is said in some years to have yielded 1,000,000l.
It has not been possible to extend it to Malwa, but the East India Company grant passes for the
transit of Malwa opium to the place of shipment. (Report of a committee of the House of Lords 'On the Affairs of
the East India Company,' 1830.)

Opium is often adulterated with the pulviserved leaves
and stalks of the poppy, which are mixed up into a
medicinal mass with gum and some similar substances.
Mulburn (Oriental Commerce) gives the following dec-
tions for testing the quality and purity of opium:

'Opium is very heavy, of a dense texture, commonly soft
enough to receive an impression from the finger. It should be
chancey, and it will be found that the powder is dark, and
its colour will not exceed that of the fingers, and dark thst,
unless held to the light, it appears black; of a
strong smell and bitter taste; as free from leaves as possible,
and care should be taken, by rubbing it between the
finger, to find that there is no roughness or grittiness.
This powder is alone worth a great deal. It is now
adulterated with several materials. The genuine opium
prepared for smoking is frequently adulterated with
pum-sugar, and crude opium with the fruit of the jussir, or
plantain.

The East India opium is exported in chests, of 150 lbs.
each, lined with hides. The principal market is China; but
it is also in demand in all Eastern countries, the Malay
Peninsula, Sumatra, Borneo, Celebes, and other islands of
the Indian Archipelago. In 1821, of the total quantity
imported, three-quarters were for China and Macao, a
fifth for Peninsular India and between a fifth and an
eighth for Java. Mr. Crawford states (Indian Archipelago,
vol. ii., p. 520) that in the islands opium sold at an
advance upon the monopoly price of Bengal of 169 per cent.,
and upon the first cost of the opium; that trade
throughout all the islands, but the article pays a heavy duty.
In Java the native princes monopolise the sale, and farm it
to the European government. In 1826 the consumption
of the island was about 550 chests, but varied with the
market price. In 1833, the price of opium was 6s. per
pound, the annual consumption varied from 600 to
1200 chests; but while Java was in our possession, Sir
Stamford Raffles fixed it at 300 chests, without exciting
any complaint, but by creating an illicit trade. The opium trade is
farmed in Sumatra, in Siam, in the Moluccas, and in the
valley of the Amur. In 1833, as a substitute for the monopoly,
and in a commercial treaty which the Suezese entered into
with the East India Company in 1833, it is declared liable
to be seized and destroyed whenever found.'

Mr. Davis states ('China,' vol. ii., p. 453) that an
exaggerating taste for opium pervades all classes in China,
and that it has spread with astonishing rapidity. From the
superior classes, who were the first to practise it, the
habit of opium smoking has descended and become gener-
ally established. The [M. W.] estimate coordinates the
An account of the opium trade in Bengal in 1813, and
a first-hand report of the cultivation of the poppy.

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small balls, one of which is placed in a wooden pipe with some combustible substance, when as many whiffs are taken as the habit of the smoker will permit. At convivial entertainments a dish of the prepared opium is often brought in with a lamp, and the host, taking up a large pipe, lights it, and after two or three whiffs, passes it to his guests, there being every reason to believe that the deaths which occur without exciting public attention, and which arise from the indiscriminate and injudicious use of cordials and other made-up medicines for children, of which opium is the base, are as numerous as those which come under the operation of the corset.

The opium consumed in this country is chiefly from Turkey. From 1827 to 1834, the total quantity imported into the United Kingdom was 668,443 lbs., of which 581,360 lbs. were from Turkey. Opium in small quantities is a permanent article of import from India and France; occasionally, but in still less quantities, it is imported from Russia, Germany, Holland, and Belgium; and but rarely from India. Within the last few years the importation of opium to England, and the quantity has been yearly increasing. In 1838 the total quantity of opium imported into the United Kingdom was 95,332 lbs. from the following countries:—Turkey, 50,544 lbs.; Egypt, 12,234 lbs.; Holland, 970 lbs.; France, 801 lbs.; India, 457 lbs.; Russia, 443 lbs.; Portugal, 327 lbs.; East Indies, 580 lbs. The quantity re-exported was only 13,028 lbs. In 1837 the imports were 79,651 lbs.; and 67,476 lbs. were exported to the undermentioned countries:—Russia, 836 lbs.; India, 780 lbs.; Belgium, 116 lbs.; France, 443 lbs.; Portugal, 327 lbs.; Turkey, 234 lbs.; China, 58,874 lbs.; United States of America, 3180 lbs.; Egypt, 53 lbs.; and in trifling quantities to several other parts. The supply received from each country is liable to gross fluctuations. In 1833 the quantity imported from France was 11,508 lbs., and from Italy, in the same year, 9,452 lbs. In 1830 the supply from Turkey was 192,136 lbs.; in the following year 8184 lbs.; and again in 1834 it amounted only to 12,436 lbs., though this was in a most impoverished year, when the population was only 72,020 lbs. On the 5th January, 1832, the quantity of opium in bond in London, Liverpool, Bristol, and Hull, was 10,674 lbs.; and on the 5th January, 1833, 20,517 lbs. Up to the 12th of May the duty was not reduced to 4s., but in that year it was reduced to 4s., by 9 Geo. IV., c. 76; and in 1836 to 1s., by 6 and 7 Wm. IV., c. 60. The price of Turkey opium in bond, in 1831, was from 17s. to 18s.; in 1835, 14s. to 14s. 6d.; and in November, 1839, the price had fallen to 10s. per lb. The low price in latter years may be accounted for by the prohibition in the United States, and probably by the restriction by the then existing state of the opium trade in China; but it has since risen to 12s., and a Greek house in London holds a thousand chests at a still higher price.

Mr. Davis states ('The Chinese,' vol. ii.) that opium has always been prohibited in France, and that the value of the opium sent to China has exceeded the value of the tea which we have taken from that country. This fact is shown in a table in Mr. Davis's work:

Imports in 1833.

<table>
<thead>
<tr>
<th>Opium</th>
<th>11,618,617</th>
<th>Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other imports</td>
<td>11,586,577</td>
<td>9,133,749</td>
</tr>
<tr>
<td>Other exports</td>
<td>11,509,521</td>
<td>23,476,244</td>
</tr>
</tbody>
</table>

Exports in 1833.

| Dollars | 20,443,270 |

Nothing but the extraordinary corruption of the Chinese authorities can account for this increase of a trade prohibited by the laws; but it is another proof of the difficulty of resisting in force regulations which are at variance with the popular habits and taste.

Macao was at first the centre of the Indian opium trade, but in 1829, in consequence of the conduct of the Portuguese merchants, the trade was prohibited and the island of Lintin. Here the opium is kept stored in armed ships, and delivered to the Chinese by written orders from Canton, on the sale being concluded and the money paid at that place.

But in 1832 the number of chests of opium imported into China was 23,670, of the total value of 15,383,160 dollars, or above 3,000,000l. The price had been falling for several years, and at the same time the quantity imported had increased. Mr. Davis, writing in 1836, expresses an opinion that this increase has rendered the Chinese more strict in the prevention of opium smuggling. The Chinese censor showed, in the memorial to the emperor already quoted, that the 'magistrates of districts issue proclamations interdicting the clandestine sale of opium, at the same time that their kindred and clerks and servants smoke it as before. Then the nefarious traders make a pretext of the interdict for raising the price. The
police, influenced by the people in the public offices, became the second purchasers of opium, instead of labouring for its suppression; and thus all interdicts and regulations become vain.' In 1833 the emperor was induced to issue some fresh regulations for checking the introduction of opium, awarding punishments of various kinds to the different classes of offenders. Let the smoker be punished with one hundred blows, and pilloried for two months. Then let them declare the seller's name; and, in default of this declaration, let the smoker be punished, as an accomplice of the seller, with a hundred blows and three years imprisonment. Let the departments who buy and smoke opium be punished one degree more severely than others; and, let governors and lieutenant-governors of provinces, as well as the magistrates of subordinates, be required to go to prison that there may be no opium smokers in their respective departments. Let a joint memorial be sent in at the close of every year, representing the conduct of those officers who have availed themselves of the privilege. From a communication in the 'Colonial Gazette,' No. 39, and also from a pamphlet published by an American merchant at Canton, it appears probable that the Chinese government is less alarmed about the introduction of opium, than at the drain of bullion which the opium trade has caused to the present government; but it is paid for in silver, but opium is a luxury, and has so successfully served the purpose as a medium of commercial exchange, that it has been less necessary to employ coin or bullion. The opium trade has thus been the means of draining China of the precious metals of her commerce, but has been instrumental in the gaining of twenty years, until their price has risen. The Chinese do not regard gold and silver as signs of wealth merely, but as wealth itself, and in many of their public documents relating to the opium trade the export of silver is also noticed. In the latter cases it is considered the paramount grievance. In 1836 an officer of the Chinese government proposed that opium should be rendered a legitimate article of commerce, and that the cultivation of the poppy should be permitted. While the extraordinary character it may appear, the poppy is cultivated in China through the connivance of the local functionaries, who are the most corrupt officials in the world. The cultivation is carried on at least six different provinces in opposite extremities of the empire, and in one of these provinces the quantity of opium prepared annually amounts, it is said, to several thousand chests, that is, about as much as was imported into the whole of China forty years ago; and, adding the quantity prepared in the other five provinces, the growth of Chinese opium is necessarily considerable; and it will be very materially stimulated by recent circumstances connected with the supply of the foreign article.

In March, 1839, the Chinese authorities appear to have taken active steps with a view of putting a stop to opium smuggling, by informing the merchants, and retaining them in custody until the stock of opium on hand belonging to all foreigners was delivered into their hands. On the recommendation of Captain Elliot, the superintendent of the British East India Company, a chest of opium, worth nearly 3,000,000 of sterling, was delivered to Chinese authorities. The whole of the opium was subsequently destroyed by the Chinese, foreigners being invited to witness the operation. Three vats, 175 feet by 24, were prepared, and each chest being re-wrapped and broken up in the presence of superintending officers, the contents were thrown into the vats. The destruction was partly effected by salt and lime, and a large number of men were employed from day to day with long rakes in macerating the opium until a thick sludge was produced, when and when opened which communicated with the river, and the whole was washed away. The spot where this operation took place was well guarded, the workmen were ticketed, and, indeed, were generally present, in the destruction of the drug at least, acted with perfect secrecy. About 4,000 chests per day were destroyed. The merchants then retired to Macao, but after a residence of three months they were expelled by the Chinese on the 27th of August, in consequence of Elliot's refusal to give up for punishment a seaman (whose name could not be discovered) charged with killing a Chinese in a brawl. They retired on board the English merchantmen at Hong-Kong, but the fleet being in want of provisions, Captain Elliot, on the 4th of September, determined to proceed to Macao with a supply from the natives, but was opposed by three Chinese war-junks, a conflict ensued in which several Europeans were wounded and some Chinese killed. A fresh attack, which was about to take place at day-break on the 5th, was countermanded by Captain Elliot. This affair has complicated still more our commercial relations with the Chinese, the receipts which Captain Elliot gave to the British merchants, on behalf of the English government, promising indemnity for the seizure of their property, have been offered as 'opium scrip' in the markets of Calcutta, Madras, and Bombay, and have also been remitted to London for negotiation. Captain Elliot holds his appointment under the 4 & 5 William and Mary, 1825, providing for regulating the trade to China and India. This provides for the establishment of a British authority in the dominions of the emperor of China, and invests the superintendant with many important powers relating to the trade. The decision of the English government referred to this subject, whether it will honour Capt. Elliot's opium drafts or what steps it may order to be taken in China, are at this moment (January, 1840) unknown in England. A communication was sent in November, 1839, by the Foreign Office to the East India and China Associations, in reply to an address from that body, from which it appears that the propriety and expediency of Captain Elliot's proceedings, so far as they were then known, were approved of by the government. A communication, dated on the following day (November 28th, 1839) to the East India Company, of state for foreign affairs declined noting the intention of the British government in reference to a blockade of the Chinese ports. In the Queen's speech on the opening of parliament, January 16, 1840, the state of the Chinese interests in China was alluded to in the following terms: 'Events have happened in China which have occasioned an interruption of the commercial intercourse of my subjects with that country. I have given, and shall continue to give, the most serious attention to the matter so deeply affecting the interests of my subjects and the dignity of my crown.' In the meantime the government sales of opium at Calcutta are not discontinued, and 18,539 chests are advertised by the government; but a second species of Banyan and Benares, from January to June, 1840. The general belief is, that it will not be possible under any plan, however rigorous, to check the smuggling of opium into China.

I. An account of the quantity of Opium imported, exported, and cleared for consumption in the United Kingdom.

<table>
<thead>
<tr>
<th>Year</th>
<th>Duty</th>
<th>Quantity (duty)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820</td>
<td>92d</td>
<td>16,169</td>
</tr>
<tr>
<td>1821</td>
<td></td>
<td>18,080</td>
</tr>
<tr>
<td>1822</td>
<td></td>
<td>18,391</td>
</tr>
<tr>
<td>1823</td>
<td></td>
<td>20,985</td>
</tr>
<tr>
<td>1824</td>
<td></td>
<td>22,752</td>
</tr>
<tr>
<td>1825</td>
<td></td>
<td>20,592</td>
</tr>
<tr>
<td>1826</td>
<td></td>
<td>26,329</td>
</tr>
<tr>
<td>1827</td>
<td></td>
<td>26,680</td>
</tr>
<tr>
<td>1828</td>
<td></td>
<td>23,970</td>
</tr>
</tbody>
</table>

Average Annual Quantities at various periods, each year inclusive—

<table>
<thead>
<tr>
<th>Import</th>
<th>Export</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1826-70</td>
<td>1833</td>
<td>1834</td>
</tr>
<tr>
<td>1829</td>
<td>1859</td>
<td>1889</td>
</tr>
<tr>
<td>1826</td>
<td>1829</td>
<td>1830</td>
</tr>
<tr>
<td>1831</td>
<td>1832</td>
<td>1833</td>
</tr>
<tr>
<td>1834</td>
<td>1835</td>
<td>1836</td>
</tr>
</tbody>
</table>

II.—Consumption and Value of Indian Opium in China.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Value (duty)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1840</td>
<td>3,567,000</td>
</tr>
<tr>
<td>1841</td>
<td>3,567,000</td>
</tr>
<tr>
<td>1842</td>
<td>3,567,000</td>
</tr>
<tr>
<td>1843</td>
<td>3,567,000</td>
</tr>
</tbody>
</table>

Average annual number of chests of Patna and Benares and Malwa, from 1816 to 1823, 4,005; from 1824 to 1831, Patna and Benares, 965 dollars; Malwa, 965 dollars.

Range of Prices from 1816 to 1823—Patna and Benares, from 826 to 837.

From August 30th.
highest price per chest, 2540 dollars, in 1829-3; lowest, in 1830-1, 790 dollars: Malvas, highest price, in 1820-1, 1800 dollars; lowest price, in 1830-3, 120 dollars.

OPONONAX CHIRODNIUM (Koch), a native of the south-eastern part of Asia Minor, a tall plant often eight feet high, from the base of which the branches arise, its root of which, when wounded, flows a yellow milky juice, which hardens on exposure to the sun and air. It occurs either in tears or in masses called placenta. The tears and the fleshy stem, fatly in the touch, externally brownish-yellow, fragrant, and, on being triturated, yields a yellow powder. The odour is strong, somewhat nauseous, resembling amomumcum with a bitter balsamic taste. The specific gravity is 1.624.

Its constituent is resin, gum, and volatile oil. In its action on the human system it corresponds with the other gum-resins of the Umbelliferae. [ASSAFORTIDA.] The Perula Hooshee, a native of Beluchistan, produces a gum called hooshee, though not collected, resembles the Opopanax of the European shops. (Royse, Flora of the Himalaya, p. 231.)

OPORTO (O PORTO, 'the Port'), the largest city in Portugal, Lisbon excepted, and a seaport in the province of Entre-Douro-e-Minho, is situated on the declivity of a hill in an elevated situation on the northern bank of the river Douro, and about three-fourths of a league, or two English miles, from its mouth, in 4° 11' N. lat., 8° 40' W. long., about eight miles high. The religious orders, the city presents a very striking and romantic appearance; the houses, being all white-washed, give it an air of excessive cleanliness, but, on a closer inspection, most of the streets, especially those on the declivity of the hill, are found to be narrow and built in ancient fashion. Small and compact houses, as well as in Spain, suppressed since the establishment of the liberal system. It is the see of a bishop, who resides chiefly at Messanfrio, but has a very fine modern-built palace within the city. A theatre, in the highest part of the town, built by an Italian architect, was opened in 1827. The seat of government is La Saravia.

The principal trade of Oporto consists in wine, white or red, but chiefly the latter, which is made in the province of Tras-os-Montes, to the north-west, and in some districts of Oporto itself. During the Peninsular war, it was carried into the fleet by Don Miguel, and was afterwards exported in large quantities to various parts of Europe and America, but the greatest consumption is that of this country, where it is known as 'Port wine.' The amount yearly exported varies from 50,000 to 70,000 pipes. There are other articles of manufacture, such as the manufacture of silks, potteries, and lemons, and oranges, of which last fruit no less than nine millions were exported in 1789. The imports are woolen, cotton, iron, and hardware manufactures, mainly from England; salt-flax, hemp, and flax; wines and rice from the United States. There are also at Oporto some manufactures of hats, silks, linen stuffs, and pottery, besides ropewalks and dockyards, none of which however are in a thriving condition.

The population of Oporto is stated by Murphy at 63,000 souls; but he no doubt forgot to include the two annexed towns of Villanova and Gaya, which in 1827 made it amount to eighty thousand. That number however must have diminished rather than increased by the loss of the portuguese colonies, a drain which has since been stopped. This obstacle once surmounted, the river is well adapted to the purposes of trade, being very deep in front of the town. Two-masted vessels can come close to it, those with three masts within a quarter of a league, and the large Brazilian ships alone used to unload their cargoes in the road. The quay, which is of a simple construction, extends the whole length of the town.

Oporto was occasionally the residence of the ancient king Hostages, and the city of Oporto was, in 1448, wrested Lisbon from the hands of the Almoravides, in October, 1147. During the middle ages Oporto was famous for the strength of its fortifications; it was partly surrounded by an old wall five or six feet thick, flanked at intervals by strong towers. To the westward, along the declivity of the hill, is the market town of Gaya, where, in antient times, a place named Calle, mentioned by old writers, is situated. It is supposed to the above Calle. The site of this place, being found more convenient for ships owing to the greater depth of the river, the former was abandoned by its inhabitants, who migrated to the latter. Hence the name of Oporto, or Porto Calle, which is, the name of Porto Pera, and the name of Porto Porto, at last Pera, were derived. To the east lies the considerable and populous town of Villa-nova do Porto, chiefly inhabited by wine-coopers and other persons employed by the merchants of Oporto; and between that town and Gaya, on a small plain along the bank of the river, are the immense vaults, or lodges, as they are there called, where the wine is kept till it is stored. Between the village where these vaults are and Oporto there is a communication across the river by a bridge of boats, the expense of which is defrayed by each person paying a small copper each time he crosses. All communication is however suspended during a few weeks in the spring, when the river is so much swollen by the heavy rains and the melting of the snow on the mountains of Spain, that the water often rises to the height of twenty feet, as in 1820, when it did incalculable damage. In the shipping season, there is a rocky eminence near Villanova the celebrated convent and garden called Mosteiro da Serra, which once belonged to the religious order of Austinian monks. It was there, during the Peninsular war, that the French fleet (the Duoro under a tremendous fire from the batteries erected by the French on the north side, and it was from there also that in 1832 Don Pedro, aided by the British, repulsed the rebellious troops commanded by the usurper Don Miguel.

Oporto contains four suburbs—Mazarrelos, Cedealos, Sant-o Ovidio, and La Lapa, which, together with the city, cover an extent of ground of about two miles. It has 11 public squares called campos, of which the most spacious are As Ortes, San Roque, and Vitoria; 14 hospitals, or charitable asylums; 90 churches, besides a fine and spacious cathedral rebuilt by Henry of Besancon, first count of Portugal, A.D. 1105; and 17 monasteries, now uninhabited, in various parts of Portugal, as well as in Spain, suppressed since the establishment of the liberal system. It is the see of a bishop, who resides chiefly at Messanfrio, but has a very fine modern-built palace within the city. A theatre, in the highest part of the town, built by an Italian architect, was opened in 1827. The seat of government is La Saravia.

The climate of Oporto is damp and foggy in winter, in consequence of its mountainous situation; but, although the river is navigable the whole year round, owing to the slope of the country, the climate is in no way unhealthy.
somewhat differs from that of the southern provinces, and
the peasants use wooden shoes. (Milano; La Cidre, His-
toire Generale de Portugal, vol. ii.; Link's Travels.)

OPOSSUM. The term Opossum is generally used to
designate the Didelphidae, now confined to the American
continents. The former existence of this type in Europe
in association with Thylacotherium, Anoplotherium, and
other extinct placodontous quadrupeds, is proved by the
fossil remains in the Paris basin (Eocene of Lyell).
The dentition of these scuratorial Marsupials bears more
resemblance to that of the Bandicoots (Perameles) than to
that of the Dasyurus, if the structure of the molar teeth
be excepted.

The whole of this subfamily have the inner toe of the
hind foot converted into a thumb, destitute however of a
claw, and this development is apparent in nearly all the
species which have a scale prehensile tail. Professor Owen
marks that in some of the smaller Opossums the subdu-
ominant tergimentary folds are rudimental, or merely serve
to conceal the nipples, and are not developed into a pouch;
and in these the young adhere to the mother by entwining
their little prehensile tails around hers, and clinging to the
fur of her back; whence the specific name dorseiger, ap-
plied to one of the species. He further observes that
few facts would be more interesting in the history of the
Marsupials than the condition of the new-born young, and
their degree and mode of uterine development in these
Opossums. Since the Marsupial bones serve not, as is
usually described, to support a pouch, but to aid in the
function of the mammary glands and teats, they are, he
adds, of course present in the skeleton of these small pouch-
less Opossums, as in the more typical Marsupials. (Pro-

essor Owen's interesting paper On the Classification of the
Marsupia, in Zool. Trans., vol. ii., part iv. and the article
MARSUPIALA.)

The Roman Catholic religion preponderates more than
any other part of Silesia. Of a population of 745,468, a
considerable part are Protestants.

There are some manufactories in the government; one
considerable export trade in the natural products of the
country is carried on by means of the Oder, which tran-
s the country in its whole extent.

Oppeln, the capital of the government, is situated
in 50° 36' N. lat. and in 17° 57' E. long. It is a
walled town with four gates, and is situated on the Oder,
in which there is an island called Parachke, which is not
more than a mile across like a mark, and contains a coffee-
house, and a bathing-house. The island is connected
with the left bank by the great bridge, and with the right
by two bridges over an arm of the Oder. The principal
buildings are not remarkable. There are several churches,
the most ornate of these being M. Grynaeus's school, a hospital, and other charitable institutions. The popula-
tion, according to the latest census (1st January, 1839),
is 6821. Besides tanneries and manufacturies of earthenware
there are manufacturies of linen, tape, and leather. The
town has a good trade in timber, zinc, lead, calamine, hard-
ware, leather, woollen cloths, and Hungary wines.

(Müller's Handbuch, 1836; Fischel's Handbuch der
Schichten, 1817; Hassel's Handbuch; Prussische Sta-
kris, vol. ii., which gives the latest official returns of the
population.)

Oppenheim is the capital of a district of 39 parishes,
with 15,000 inhabitants, on a steep declivity on the
plateau of the Rhein, and consists of the grand-duchy of Herzogin
Evelyn on the site of the Roman Monastery. The town, which is
in number, carry on a considerable trade by the Rhine. Oppenheim has one Roman Catholic and one Prester
church, four hospitals, and a Protestant consistory. The
town was formerly a free imperial city, and a duchy
was conferred on it in 1076. It was a place of some celebrity in the
Thr. Years' War, when it was almost destroyed by Gustave
Adolphus, and afterwards in 1689 by the French under
Melac. The beautiful cathedral of St. Catherine, a mon-
ument of German architecture of the thirteenth century,
and an imitation on a smaller scale of the cathedral of Cologne
still lies partly in ruins. The ruins of Landschroenborg on
the Swedish pillar are worthy of notice. In the castle
Oppenheim is the romantic Nierstein, called by the Roman
Nerii, famous for its wine; and in the celebrated house
(where which may be translated the Vale of Delight) is the
called Sironabad, which was known to the Romans, and
been again in use since 1802.

Oppian (Ovsterov), an eminent grammarian and poet
of Cilicia (Hieronymus, in Exek. 47; Atlantis, Deip-
ib. i., p. 13 b., ed. Cassub.,) two of whose works are
extant under the titles 'Cynegetica' and 'Hiasurot.' His
father's name was Agaius, and his mother's Zedole,
but to the time and place of his birth, he is quite
agreed. Synceullus (Chronogr., p. 352, 353) and Jer-
ms (in Chronic.) place him in the reign of Marcus Aurelius
Antoninus; but Sozomen (Prefat. ad Hist. Eccles. Sartii.
voce 'Ovsterov') and others state him to have lived at
the time of Severus; and though Oppian in both his
(Halinet.), lib. i., v. 3. and lib. iv., v. 5; Cypriot., lib.
3) addresses the emperor by the name 'Antonius,'
probable that Caracalla was meant, as this appellation
was conferred upon him when he was associated with his
father in the empire, a.d. 198 (Herodian, lib. iii., cap. 190),
and the name by which he is commonly designated by the
antique historians, Herodian, Dion Cassius, &c. At
his birth-place, Suidas supposes it to have been Car-
but the authentic author of the Greek life of the emperor,
most other authors say that he was born at Antiomara,
city which also gave birth to Dio-Discordes. Stephan Bese-
voce 'Aostaep.' Indeed Oppian himself seems to have
the assertion of Suidas, for in the third book of the His-
tica, 'v. 205, sq., he distinguishes his fellow-country-
men from their neighbours the Coryicans. His father ap-
pear to have been a person of some consideration in his
country, for he was banished to the island of Mya
sjo-dag, in the city of Cirene. Very curious and ener-
getic by his philosophical studies as to necessity in
person along with his fellow-citizens to pay his re-
to the emperor, when, in taking a progress through the
country, the sultan was detained at Antioch and
in his exile by his son Oppian, who had enjoyed the
sage of an excellent education under the superintendent.
of his father, and who now began to devote himself to poetry. Accordingly he composed his poem on fishing, and pre- sented it to the fisherman; and on the shore itself, where he had caught the fish (lib. v. 308), so that he mentions the dolphin, calls it, for its swiftness and beauty, the king among fishes (as the eagle among birds, the lion among beasts, and the serpent among reptiles) (lib. ii., v. 533, sq.), and relates an anecdote, somewhat similar to those of Oppian, in the 'Cynegeticus,' lib. v., in which he says happened about his own time, of a dolphin that was so fond of a little boy that it used to come whenever he called it by its name, and suffered him to ride upon its back, and that last was so pitifully pined away with grief on account of his death (lib. v., v. 448, sq.).

The 'Haliectus' are much superior to the 'Cynegeticus' in point of style and poetical embellishment, and it is partly on account of this great disparity that it has been supposed that they were composed by the same person. But there are other and stronger reasons in support of this opinion (which was first put forth by Schneider in the preface to his first edition of Oppian's works), rendering it almost certain that, though by the universal consent of antiquity Oppian wrote a poem on hunting, yet it cannot be that which now goes under his name. Oppian was (as we have seen) a Cilician, but the author of the 'Cynegeticus' tells us distinctly, in two different passages, that his native place was 'the island of Rhodes.' Indeed, he says (lib. ii. v. 125-127, and ibid., v. 156, 157). This has been denied by Belin de Ballu, who published an edition of the 'Cynegeticus,' Argentor., 1786, 4to. and 8vo., Gr. and Lat., and who (as Dibdin says) 'seems to have entered upon the task al- most as if he represented with the 'Haliectus' to controvert the positions of Schneider;' but it is only by altering the text in both passages (and that too not very skilfully) that he has been able to reconcile them with the commonly received opinion that the poem is the work of Oppian. In Schneider's second edition he continues to hold the same opinion, and replies to the objections of Belin de Ballu. It appears, from an allusion to fishing and the sea, in the first book of the 'Cynegeticus' (v. 77-80), that 'the Haliectus' are a sort of supplement or companion to it; and this has tended to confirm the common opinion that both poems were written by the same author.

With regard to the poetical merits of Oppian, he seems to be one of those poets whose works have been more praised than read. Julius Caesar Scaliger pronounces him 'to be a sublime and incomparable poet, the most perfect writer among the Greeks, and the only one of them that ever rivalled or even equalled Virgil.' But it cannot be accounted for that such a poet, with so unpru- dently of his subject. His style is florid and copious, the language upon the whole very good, though (as was noticed by Dan. Heinsius, Ad Notitiam Dionysiacam, p. 191) it is now and then deformed by Latinisms.

The first edition of the 'Haliectus' was published Flo- rent., 1515, 8vo., Gr. ap. Ph. Juntam. A Latin translation in hexameter verse, by Laurentius Lippius, was published 1478, 4to. They were translated into English verse by Diaper and Jones, Oxford, 8vo., 1722; into French by Thomas, Paris, 8vo., 1817; and into Italian by Salvinii, Firenze, 8vo., 1728. The 'Cynegeticus' were first published (together with the 'Haliectus') Venet., in Adb. Aldi, 8vo., 1617. They were translated into Latin verse by Oppian himself, into English by Mawer, Lond., 8vo., 1735 (containing the first book only); into French by Florence Chrestien, Paris, 4to., 1757, and by Belin de Ballu, Strasb., 8vo., 1787; into German by Lieberkühn, Upsa., 8vo., 1755; and into Italian, with the 'Haliectus' noticed above, by Salvinii. Fabricius states (Biblioth. Gr.), on the authority of Lambercius, that a paraphrase both of the 'Cynegeticus' and of the 'Haliectus,' in Greek prose by Euteneus, still exists in MS. in the library at Vienna. The last and best edition of Oppian is Schneider's second edition, which unhappily is unfinished, 8vo., Lips., 1813, Græc. with a Latin verse translation of the 'Cynegeticus,' by Pfeiffer, published for the first time though executed in 1855. The most complete work on Oppian is Schneider, Argentor., 1776, Gr. and Lat., 8vo., containing also the paraphrase of the 'Ixeutics,' by Euteneus, men-
tioned above. Schneider published some addenda to this addition in his *Analea Critica*, 8vo., Francof., 1777; Fasc.

[Conjunction and Opposition.]

OPTICS is that branch of physical science which explains the formation of images, as depending on the known laws by which the modifications of light are governed. [Light.]

These images are formed either by polished reflecting surfaces or by transparent refracting media. In the former case the angles of incidence and reflection are equal; in the latter the sines of the angles of incidence and refraction are in a constant ratio for one and the same medium. The position and magnitude of the image of an object is easily ascertained, when we have previously ascertained the position of the image of a point, in reference to the position of the point itself and of the reflecting or refracting instrument; in other words, when we have found the relation between the conjugate foci, so called because it universally holds in optics, that whichever focus be considered the object, the other will be the image. The principal focus of an instrument is that to or from which a pencil of parallel rays falling perpendicularly (or nearly so) on the instrument is made to converge or diverge after reflection or refraction. In a plane mirror the conjugate foci are similarly situated at opposite sides of the mirror [Light]; consequently in this instance the instrument has no principal focus. Generally the distance of the principal focus from the instrument is called the focal length of that instrument, whether a reflector or a refractor. Since conjugate foci are mutually such, it follows that rays proceeding from the principal focus will, after reflection or refraction, emerge in a parallel pencil. We shall now proceed to the relations existing between the conjugate foci of spherical reflectors, observing that the axis of the instrument is the right line containing the centre of the spherical surface and the conjugate foci. The rays under consideration are those which are directed nearly along the axis, and which therefore fall exceedingly nearly perpendicularly on the reflector.

Fig. 1.

Let DBE represent the section of a spherical reflector made by a plane passing through its axis, C its centre, A the focus of incident rays, AD an incident ray, ADC being the angle of incidence; make the angle $\angle DCB=\angle DCB$, then $\angle DCB$ is the angle of reflection, and if the point of incidence $D$ were infinitely near to the point $B$ in the axis, then all the reflected rays of which the incidence was nearly perpendicularly would converge to $A$, the latter would then be the focus conjugate to $A$, for if rays diverged from $A$ they would after reflection evidently converge to $A$.

Now if a straight line as CD bisect an angle of a triangle, as the angle $\angle ADA$, it will divide the base into segments $AC$, $AC$ proportional to the adjacent sides $AD$, $DA$ (Eucl. book vi.), that is, $AC: CA:: AD: DA$, but when $AD$ is infinitely near to $B$ we may write $AB$ and $BA$ instead of $AD$ and $DA$, in which case we should have $AC: CA:: AB: BA$. Let $\angle ABD=\angle ABD$, and the radius $CB=r$; then $\angle ABD=\angle ABD$; whence $\angle ABD=\angle ABD$; or $\angle ABD=\angle ABD$; therefore $2\angle ABD=\angle ABD$, which may be also written in the form $\frac{1}{2}\angle ABD=\frac{1}{2}\angle ABD$. We should have precisely the same investigation if we had supposed rays as $ED$ to fall on the convex side converging to a focus $A$; but being reflected in the direction $DE$, they would appear to diverge from the focal point $A$. In the above formula $r$ applies to two cases, viz. when diverging rays fall on the concave surface, or converging rays on the convex surface, of a spherical reflector.

Example 1.—A candle is placed before a concave speculum at a distance of 3 feet from it: what will be the distance of its image from the same, the radius of the speculum being 2 feet?

Here, we have given $\Delta=3$ feet, $r=2$ feet, and to find $\Delta'$. We substitute these numbers in the general formula $\frac{1}{r}=\frac{1}{\Delta'}$; which thus becomes $\frac{1}{2}=\frac{1}{\Delta'}$; whence $\frac{1}{2}\Delta'=\frac{1}{2}\Delta'$ and therefore $\Delta'=\frac{1}{2}\times 2=1$ foot; the image will consequently be 1 foot 6 inches in front of the speculum.

It being sometimes convenient to measure the distances of the foci of the centre instead of the surface of the speculum, it is easy to find a proper formula from the proportion we have established, viz. $AC: CB:: AB: BA$. Let $AC=p$, $CB=r'$; then $AB=r+p$, $BC=r-p$, whence $p: r = (r-p)$, or $p: r = p: (r-p)$; therefore $\Delta\times r'=2p'$ consequently $\frac{1}{r'}=\frac{1}{\Delta'}=\frac{1}{2}p'$; thus in the example given above we find (since $p=1$ and $r=2$) $\frac{1}{r'}=\frac{1}{2}$, which is agreeable with the former result.

When the incident rays proceed from a point exceeding distant (as the sun, for instance) then $\Delta$ being very great, $\Delta'$ will be exceedingly small and may be rejected, in which case we have $\frac{1}{\Delta'}=\frac{1}{2}\Delta'$, that is, parallel incident rays are made after reflection to convex to F, the middle point of the radius CB. Hence the focal length of a spherical speculum is one half that of its radius.

In examining the formula for the positions of the conjugate foci, viz. $\frac{1}{\Delta'}=\frac{1}{\Delta'}$, we find that when $\Delta=\infty$ we must have $\Delta'=r$; hence when the focus $A$ is at $C$ the central conjugate focus is at the same point. If we have the left of the C (in the fig.) $\Delta$ being then greater than $r$, $\Delta'$ is less than $\frac{1}{r}$ and therefore $\frac{1}{\Delta'}$ must be greater than $\frac{1}{\Delta'}$. Therefore the central conjugate focus is at the same point. If we have the left of the C (in the fig.) $\Delta$ being then greater than $r$, $\Delta'$ is less than $\frac{1}{r}$ and therefore $\frac{1}{\Delta'}$ must be greater than $\frac{1}{\Delta'}$. Therefore the central conjugate focus is at the same point. If we have the left of the C (in the fig.) $\Delta$ being then greater than $r$, $\Delta'$ is less than $\frac{1}{r}$ and therefore $\frac{1}{\Delta'}$ must be greater than $\frac{1}{\Delta'}$. Therefore the central conjugate focus is at the same point.
sun may be collected by a concave speculum in its principal focus (or burning-point) F.

Example 5.—To find how much an object will be magnified by the same speculum, when placed 1 foot 6 inches in front of it.

Here $\Delta' = 1$, $r = 2$, $2\Delta' - r = 1$; therefore in linear dimensions the ratio is as 2:1; and in cubical as 8:1.

Let us next consider the relation between the conjugate foci when diverging rays fall on a convex spherical speculum, which will also be the relation when converging rays fall on a concave speculum as will be evident by inspection of the figure (fig. 5). Employing the same letters with the diagram as before, C will be the centre, A the focus of incident rays, a of reflected rays, &c.

Let $AD$ be an incident ray near the axis $AC$, join $CD$ and produce to $e$; make the angle of reflection $CDe$ equal to the angle of incidence $ADE$, and produce the reflected ray $De$ to meet the axis in $a$; then when $D$ is infinitely near $B$, $a$ is the focus conjugate to $A$. The same figure would equally apply if we had supposed rays $ED$ converging to $A$ to fall on the concave surface, for since the angles $ADE, CDe, aDC, CBDe$ are all equal, $D$ would then be the actual reflected ray and therefore $a$ would be yet the focus conjugate to $A$. Now since the external angle $aDE$ of the triangle $ADE$ is bisected by the straight line $DC$, it follows (Simson's *Euc.*, book 6) that $AC : aC = AD : Da$ (and $D$ being supposed infinitely near $B$) in order that the rays may be incident nearly perpendicularly :: $AB$ : $B$. Let $AB = \Delta, aB = \Delta', CB = r, CA = \rho, Ca = \rho'$, then we have

$\rho : \rho' :: \Delta' : \Delta$,

or $r : \Delta : r - \Delta :: \Delta : \Delta'$, hence

$\Delta r + \Delta' = \Delta r - \Delta'$,

and therefore $2\Delta r - \Delta = \Delta - \Delta'$ whence $\frac{1}{\Delta} = \frac{2}{\Delta'}$.

Again the same proportion $\rho : \rho' :: \Delta : \Delta'$ may be written $\rho : \rho' :: r - \Delta : \Delta'$; hence $\rho (r - \rho') = (\rho - r)$ therefore $r (\rho - r') = 2\rho r'$ whence $\frac{1}{r} = \frac{2}{\rho r'}$.

If we suppose $\rho = r$, we find $\rho' = r$, shows which the foci are together at $B$, and as $\rho$ increases, $r'$ diminishes, until $\rho$ becomes infinite, when $\rho' = \frac{r}{2}$, showing that $a$ will then reach the principal focus $F$. Hence, in general, the principal focus move in contrary directions, and meet both at the centre and circumference. In the formula just given one of the conjugate foci lies between the principal focus and the surface of the speculum; while in the first set, one lay between that point ($F$) and the centre.

With respect to images, if $AG$ be the object and $g$ the focus conjugate to $G$, then $ag$ will be the image of $AG$; and conversely, if $ag$ be the object, $AB$ will be the image, and their proportion may be easily calculated, for $AG : ag :: CA : Ca$, that is, as $\rho : \rho'$, or as $\Delta : \Delta'$, which we have seen is the same ratio.

Example 4.—In the concave speculum of two-foot radius, an object is placed 6 inches of its interior surface: how far will the image appear at the back of the speculum and how much will it seem enlarged?

Here $r = 2$ foot, $\Delta' = \frac{1}{2}$ foot, and since $\frac{1}{\Delta} - \frac{1}{\Delta'} = \frac{2}{\Delta}$ we have $2 - \frac{1}{\Delta^2} = 1$, therefore $\Delta = 1$, or the image will appear a

foot behind the convex side and will be enlarged in linear dimensions as $\Delta$ to $\Delta'$, that is, as 2 to 1; in surface 4 : 1; in volume 8 : 1.

Example 5.—An object is placed 10 feet distance from a convex speculum of 3 feet radius; find the position and magnitude of its image.

Here $r = 3$, $\Delta = 10$, therefore $\frac{1}{\Delta} - \frac{1}{\Delta'} = \frac{2}{\Delta} \therefore \frac{1}{\Delta'} = \frac{23}{2}$ therefore $\Delta' = \frac{7}{23}$ foot, or 1 foot 3 inches, with $\Delta' = \frac{30}{23}$ foot, and in this case the convexity of the speculum the image will seem to be, and (in linear dimensions) Object :: $\Delta : \Delta' :: 10 : \frac{30}{23}$, that is as $23 : 3$; the surfaces as $529 : 9$, &c. Thus the reader with only a moderate knowledge of simple equations will be able to solve all questions relative to the images of objects formed by spherical specula, concave or convex. The images in the last two examples are erect. Generally the image will be erect or inverted according as one of the conjugate foci is between the principal focus and surface, or between that point and the centre; for it is easily seen that in every case one of the foci is in some part of the radius between the centre and surface.

In the preceding calculations, we have confined ourselves to such rays as fall nearly perpendicularly on the reflecting surfaces. The rays which are at a considerable distance from the axis of a spherical speculum are not reflected accurately to the same point as those incident near the axis; hence arises a diffusion of the reflected rays arising from the sphericity of the speculum and denominated the spherical aberration; and when measured along the axis, it is called the longitudinal aberration; but when perpendicular to it, through the focus, the lateral aberration. It will be sufficient in this article to calculate their amount in the most usual case when the incident rays are parallel, as those which proceed from the heavenly bodies.

Let $SD$ represent a ray falling parallel to the axis $CB$;

BD being the intermediate arc of the section of the speculum, $Da$ the reflected ray; if this figure revolve round $CB$, it is evident that all rays incident on the annulus through which $D$ moves will likewise be reflected to $a$, which is therefore strictly the focus of that annulus. Now $F$, the middle point of $CB$, is the point to which rays falling near the axis are reflected; hence $aF$ is the longitudinal and $Fb$ the lateral aberration corresponding to the above annulus. To calculate the amount of these we may observe that the angle $SDC$ (of incidence) is equal to $CDa$ (of reflection), and also to $DCa$ (by the theory of parallels); and since the angles $adC, aCD$, are thus equal, therefore $Ca = aD$. Let $DT$ be a tangent at $D$, then $aDT$ and $AD$, being respectively the complements of $aDC$ and $aCD$, are equal also, whence $aF = aD$, but also $Ca = aD$, therefore $a$ is the middle point of $CT$; and since $F$ is the middle of $CB$, it follows that $aF$ is the half of $BT$; thus the longitudinal aberration is known; and since the angle $Fab$ is the double of $DCB$, the lateral aberration is from hence known. Let the angle $DCB = \theta$, and radius $CB = r$, then $CT \approx r \cos \theta$ and $BT \approx r \sec \theta - 1$ (sec. $\theta - 1$), hence we obtain the exact values of the two aberrations, viz. the longitudinal $= \frac{r}{2}$ (sec. $\theta - 1$), and the lateral $Fb = \frac{r}{2} \tan \frac{2 \theta}{2}$ (sec. $\theta - 1$).

Hence in order that the aberrations may be inconsiderable, we ought to have the extreme magnitude of
Let \( AB = \Delta, \ \alpha B = \Delta', \) and \( m \) be the index of refraction; then \( \Delta A \) is equal to the index of refraction and \( \alpha B G \) of that to which \( \Delta \) and \( \Delta' \) were respectively denoted by \( 1' \) and \( R \); hence the angle of incidence, and \( \tan \alpha B G \) to that of \( \Delta \) and \( \Delta' \) very nearly B, the angles \( \Delta \) and \( \Delta' \) are exceedingly small; their cosines may be taken as units, in which case \( \Delta = \tan \Delta = \frac{1}{m} \), and \( \Delta' = \frac{1}{m} \); and since \( m \) is greater than unity, \( \Delta' \) is greater than \( \Delta \) in the ratio of \( m \cdot \tan \Delta = m \). Conversely, if a ray from a medium bounded by a plane surface pass into vacuum, \( \frac{1}{m} \) is then the index of refraction, and we should have \( \Delta' = \frac{1}{m} \Delta \), in which case \( \Delta' \) is less than \( \Delta \). This explains why the bottom of a clear rarer seems nearer to the surface than it really is by about one-fourth of its true depth.

The image of a straight line in vacuum seen from such a medium will be another straight line; for let \( AA' \) be such a line, produce it to \( D \), and join \( D \), then since \( A'B' = A'B : \alpha B : \beta B = A : m \cdot 1 \); therefore \( \alpha' \) is the focal conjugate to \( A' \), and consequently \( A' \) is the image of \( A \). Moreover, such a ray, if ever observed that \( A' \) must be of small dimensions, and must coincide with the rays reaching the observer's eye may be considered as nearly perpendicular to \( DE \), otherwise the above proportion would require to be modified, and the image would be curved. In the above case the image \( A' \) is near remote from the surface \( DE \) than the object; but the contrary happens when the object is in the medium, when the image will be nearer the surface than the object. Hence many familiar optical phenomena may be understood. Thus, when a shadow is placed in an empty vessel, and the eye is so situated that the sides of the vessel just conceal the shadow, upon pouring into it a small quantity of water the shadow will appear as if raised up and becomes visible. For a like reason the sun and stars are visible before they actually rise above the horizon or set below it; and when a straight stick is partly immersed in water, the image of the immersed part being raised nearer to the surface than the true object, will cause the stick to appear bent or broken, as if it were shorter than it really is; but when immersed perpendicular to the surface, the stick appears to be only contracted about one-fourth of the part immersed, for the image of the object are then in one straight line.

As refracting media bounded by a single curved surface rarely ever can occur in practice, we shall proceed to consider lenses, particularly the double convex lens, as known most generally. For their various species see Lasses.

Let \( DBEB \) represent a plane section of a double convex lens, that plane including the centres \( CC' \) of the bounding surfaces \( DBE \) and \( DB'B' \); let \( A \) (in the axis \( CC' \) be the focus of incident, and \( \alpha \) of the emergent rays. Let \( m \) be the index of refraction for incident, and therefore \( \frac{1}{m} \) for emergent rays; and let \( AGK \) represent the track of a ray near the axis; let \( CB = \alpha, \ \alpha B = \Delta, \ \alpha B = \Delta', \) and the thickness \( BB' = t \), we have to determine the relations existing between these quantities. First we have sin \( \alpha G = \sin \alpha KGc, \ \alpha GAC = \alpha, \) and the inclination of \( KG \) to the axis be \( \phi \); while \( d \) is the distance of the point at
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whose labours, together with that of his son, gave a great 
impulse towards the complete accomplishment of an object
of which Newton was almost as ashamed. In the 
same career of late years we must distinguish Fr. Hinzer, 
of Bonediktbeuren, in Bavaria, who obtained at an early age
from the French Academy the prize for the actual con-
struction of achromatic glasses. Not only were the neces-
sary manual operations conducted by himself with patience
and the minutest attention to all the practical details of
the quality of his glasses and the accuracy of grinding and pol-
ishing, but he had also the merit and advantage of observing the
dark lines which cross the prismatic spectrum, and which
are of the greatest utility in determining the indices above
aluled to. From the liability to oxidation of some of the
ingredients in the composition, some of his finest telescopes
have of late become considerably tarnished, particularly
colours in exposed situations. This could not have been
easily foreseen, and many of his telescopes remain still in

good condition.
The first account of his remarkable optical discoveries is
given in a paper which he published in the 'Memoirs of the
Academy of Bavaria' for 1814-15. By means of a telescope
furnished with a telescope, he measured the distances of the
principal lines; and by applying a photometer to the differ-
coloured rays, he has drawn a curve, the ordinates of
which express the refracting powers of the rays. To these
researches he soon afterwards added some beautiful
experiments on the diffraction of light, an account of which
he published at Munich, and they also appeared in an
abridged form in the 'Bibliothèque Universelle,' January,
1815. It is believed that he was the first to publish
similar researches ascertained his death, which followed
soon after.

The accurate determination the refractive and disper-
atives indices has also been pursued with great success in this
country, and simultaneously by some of the following dis-
cting men:—Dr. Thomas Young, Dr. Brewster, Dr. Wollaston,
Sir J. Herschel, Prof. Faraday, &c.; and in
France, by Biot, Dulong, &c., the results of whose experi-
ments, in a very compressed form, are given in the two
following tables:—

<table>
<thead>
<tr>
<th>Refractive Indices</th>
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<tbody>
<tr>
<td>Hydrogen</td>
</tr>
<tr>
<td>Oxygen</td>
</tr>
<tr>
<td>Air (atmospheric)</td>
</tr>
<tr>
<td>Nitrogen</td>
</tr>
<tr>
<td>Aqueous humour of eyes</td>
</tr>
<tr>
<td>Vitrine</td>
</tr>
<tr>
<td>Sulphur glass</td>
</tr>
<tr>
<td>Alumben</td>
</tr>
<tr>
<td>Oil of almonds</td>
</tr>
<tr>
<td>Oil of turpentine</td>
</tr>
<tr>
<td>Camphor</td>
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</tbody>
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<table>
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<tr>
<th>Dispersive Powers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chrom. lead</td>
</tr>
<tr>
<td>Oil of turpentine</td>
</tr>
<tr>
<td>Oil of saffron</td>
</tr>
<tr>
<td>Green glass</td>
</tr>
<tr>
<td>Chloride</td>
</tr>
<tr>
<td>Oil of cloves</td>
</tr>
<tr>
<td>Sulphate of lead</td>
</tr>
</tbody>
</table>

OP'UN'TIA is the name given by botanists to those cac-
taceous plants which gardeners call Indian Figs, and which
are so remarkable for their stems consisting of flat joints,
brader at the upper end than the lower ends, and which evi-
dently lose that appearance, becoming both cylindrical and
continuous. On one of them, Opuntia cochenillifera, the
cochilene insect is fed, and other yields a pleasant subacid
fruit, which is eaten in hot countries. The flowers of Zima
are in some places cultivated with the cactus off the Island
vulgaris, whose large purple juicy fruits are carried for sale
to the neighbouring markets. It is however only a natural-
ised plant, its native country being South America within the
tropics.

ORA (from the Saxon ope, metal), a money of account
among the Anglo-Saxons, whatever it might have been in
other parts of Europe. In the Domelad Surrey, and, as
Dr. Hickes assures us, in his 'Disertatio Epistolaris,' in
ancient contracts of buying and selling, it is used for the
ounce, or a twelfth part of the nummulary pound.

There appear to have been two sorts of ora in use in the
Saxon times, one of sixteen pence to the ora, the other of
twenty pence. The ora of Domelad is believed to have been
made at twenty-two pence, i.e., fol. 2 b.:—
'Cxi. solid, de denaris xx. in Ora.' Ibid., fol. 11 b.:—'CXXV. lib. et x.
solid. de xx. in Ora.' Tom. i., fol. 164: 'Modo red. xxiii.'
lib. candidor, sumnumerum de xx. in Ors.' The ors of sixteen pence was of earlier date; but the existence is stated in the Placita of 37 Hen. III., Rot. 4.

In the Laws of Cnute, art. 31, 'De ponderibus,' it is said 'XV. Ors. libri fiant.' (Clerke, Connection of the Romans, Bason, and English Coins, 4to, London, 1771, p. 316; Hicken's Theorvs, Diss. Epist, pp. 111, 112.)


**ORACLE.** (from the Latin oraculum, and that from or, orr,-a, a mouth). Oracle was the Roman name used to denominate a question that was supposed to be given by any of the divinities to those who consulted them respecting the future. Sometimes also it was used to signify the response which was delivered, and sometimes the deity from whom this response was imagined to proceed, and passed on in a revelation indicated by a response. Cicero (Topic., 30) says that oracula were so called, 'quod inest in his Deorum Oratorio.' Those who were sent to consult them were sometimes called curatores. (Livy, v. 15.)

Oracular responses were called chremi (χρημαί) or mantieia (μαντεία) by the Greeks; the name mantieia (μαντεία) was also often given to the oracular place, or the seat of the oracle.

Curiosity regarding futurity, and the desire to penetrate the mysteries, are dispositions which exert a powerful control over the minds of men in every stage of society; among nations that have made little advancement in civilization and intelligence, they operate with peculiar force; and, when the mind is impressed with the belief that the gods had both the ability and the inclination to afford the knowledge so eagerly longed after, the oracles of the pagan world had their origin. Of these oracles the most famous were those of Greece, and among them, that which claimed to the closest affinity to be given by the oracular response of Jupiter at Dodona. According to the account of the priests of Dodona, it was established in the following manner. (Herod., ii. 55.) Two black doves took their flight from Thebes in Egypt. One flew to the temple of Jupiter Ammon in the Libyan desert; the other to Dodona, where, in human language, it proclaimed to the inhabitants of the district that they must establish an oracle (μαντείας) of Jupiter there. The account of the priests of Thebes was somewhat different. (Herod., ii. 54.) But the most celebrated of the Grecian oracles was that of Apollo, at Delphi, a city built on the slopes of Parnassus in Phocis. It had been observed at a very early period that the goats feeding on Parnassus were thrown into convulsions when they approached a certain deep cleft in the side of the mountain. This was the result of a peculiar vapour rising out of the cavern, and one of the goats heard was induced to try its effects upon himself. Inhaling the intoxicating air, he was affected in the same manner as those animals; and, as the inhabitants of the surrounding country, unable to explain the circumstance, imputed the convulsive ravings to which he gave utterance, while under the power of the noxious exhalations, to a divinity. Thus they gathered their impressions, and a temple was erected on the spot. The honour of the prophetic influence was at first variously attributed to the goddess Earth, to Neptune, Themis, and others; but it was at length assigned to Apollo, with whom it ever after remained. A priestess was appointed, whose office it was to inhale the hallowed air, and who was named the Pythia. She was prepared for this duty by previous ablation at the fountain of Castalia, and being crowned with laurel, was usually tripped in spirit, and placed over the chasm whence the divine affluence proceeded. Her inspired words while thus situated were interpreted by the priests. The announcements of the oracle to those by whom they were imparted, and to others, if it having been sarcastically remarked that Apollo, the god of poetry, was himself sadly deficient in the art of which he was the patron, they were subsequently given in prose. It was usual for those who took the advice of the oracle to make a sacrifice to the god, and to make an amount of wealth was amassed at Delphi, as we learn more particularly from the minute descriptions of Herodotus and Pausanias, and the institution rose to great splendor. From the union of generation in which it was based, the temple was chosen as a safe depository for much of the riches of the several states of Greece. Its sacred character however did not always prove a sufficient defence against violence and rapacity, and more than once it was plundered of its treasures. [Delphi.] Besides the oracles of Jupiter and Apollo at Dodona and Delphi, that of Tropcion, near Laodicea in Boeotia, may be mentioned, as having been held in high estimation. There were many other oracles in Greece, but of less repute.

Among the other most noted oracles of antiquity were those of Isis and Ammon in the desert of Libya, that of the Branchides in Ionia, of Pella in Macedonia, of Samos a Paphlogonia, of the head of Orpheus at Lesbos, &c. Most of the heathen deities and even the demi-gods and heroes of their own theocracies were, however, the objects of Greece numerous so-called prophecies, the productions of individuals who were probably supposed to speak under a divine influence. Such were those of Bacis and Messina, in which the battle of Salamis was predicted, and of Eryx (Herod, viii. 96.) But these productions are perhaps more appropriately considered under the head of Prophecy, though Herodotus applied to them the same name (προφητεία) as to the responses from Delphi and other oracular places. As to the Sublime oracles see Stvnt.

Though the Romans had various modes of ascertaining the will of the deities, it does not appear that oracles like those of Delphi or Dodona were ever established among them, and we find that the Greek oracles, and particularly the one named Apollo at Delphi, were consulted by them on many important occasions. (Livy, v. 15; xxx. 57.)

Among the Jews, the Urnus and Thurmmum, which by some was considered the Counterpart of the oracles of Greece, bore a striking resemblance to the heathen oracles; and the oracle of Bathcol, or daughter of the voice, which was propounded after the death of Malachi, was completely identified with them.

Of the oracles in which oracular responses were delivered were very various. At Dodona they issued from the hollow of an oak, at Delphi they were delivered by the Pythia, and at the oracle of Ammon they were pronounced by the priests. At Memphis a female or unapproachable oracle was undetermined to be returned, according as ApePA was approved or rejected, which was presented to him. (Arv.) Sometimes the reply was given by letter; and sometimes the required information could be obtained only by casting lots—the lot being dice with certain characters engraved on them, the meaning of which was ascertained by referring to an explanatory table. Dreams, visions, and preternatural voices also announced the will of the divinities.

The importance attached by the Greeks and Romans to oracular responses is a striking feature in the history of those people. Hardly any enterprise, whether public or private, of any moment, was undertaken without recourse being had to them, and their sanction being obtained. In the various combinations of our ancestors, and the fact was generally recognized, and thus gradually fell into disrepair. Cicero affirms that long before his age even the Delphic oracle was regarded by many with contempt; and there is little doubt that oracles were considered by philosophers as nothing different from the real power of nature, which the fates were the mediators and instruments of, and that they were used as a means which could be used for their purposes. The reply of Cato to Labienus, who wished him, after the battle of Pharsalia, to consult the oracle of Jupiter Ammon, embodies the opinion of that eminent Stoic respecting the propriety of thus questioning the god. 'On what account, Labienus, would you have me consult Jupiter? Should I ask him whether it be better to lose life than honor? Whether life be a real good? We have within us, Let us consider and that which is to be preferred, Nothing happens but by the order of God. Let us not require of him to repeat to us what he has sufficiently engraved on our hearts. Truth has not withdrawn from us, and so we are not enslaved in vain.' (Learned Men in Antiquity, lib. iv., v. 566-584.)

The question has been gravely discussed, whether oracular responses ought to be ascribed to mere human invention, or did they originate with the gods. Of these the fathers of the Church have maintained that these were to be considered in the latter. Allusion is made to this opinion in the first book of 'Paradise Lost,' where the spirits of Pandemonium are described as having taken possession of the various sorts of
the heathen world. There is nothing however in the history of the antient oracles to countenance such a notion, or to lead to the belief that a supernatural cunning and skill directed their responses. They were for the most part cryptically and equivocally expressed, and so as to admit of different explanations, according as the wishes of the inquirer might suggest, or the event determine. And even in those instances where trial was designed, the oracles are not the direct voice of their pretensions, it is not difficult to account for the success with which they stood the test, without calling in the assistance of demonical instrumentality.

Another circumstance respecting the oracles, which has given rise to much controversy, is, the time when they ceased altogether to give responses. Eusebius was the first who proposed the opinion that they became silent ever after the birth of Christ, and many writers, willing thus to do honour to the author of Christianity, have given it their support. Milton makes allusion to this theory also in the most magnificent of all his minor poems, 'The Hymn of the Nativity,' and in lines of solemn and elevated beauty, of which the following are the commencement, picture the superscription of the heathen idols at the advent of the Saviour:

The oracles are dumb,  
No voice or likeness hum  
Through the bearded roof in words deserving.  
Apollo from his shrine  
Can no more divine;  
Beneath hollow shake the steep of Delphos leaving.  
No nightly trance or breathed spell  
To call forth the pale-eyed from the prophet cell.'

But the circumstance that may thus be made available for the purposes of posthumous flourish, happens unfortunately to be contrary to fact. It appears from the edicts of the emperors Theodosius, Gratian, and Valentinian, that oracles existed and were occasionally at least consulted till so late an age as the tenth of that century. The fact is however, it has been of late years, though for several centuries previous they had sunk very low in public esteem. So few resorted to them, that it was no longer a matter of interest to maintain them. Towards this consummation Christianity powerfully contributed, by the superior enlightenment which it carried along with it wherever it was introduced, and by the display which it made of the falsehood and folly of the superstitions which it was destined to overthrow. The following works treat of oracles:—Cicero, De Divinatione et Fato; Clusesus (Daniel), De Oraculis Ethnicae, 1683; an attempt to prove that the Greeks borrowed the Story of their Oracles from the Holy Scriptures, by E. Dickinson, 1866; Fontenelle (Bernard le Bovier de), La France et l'Egypte, 1731; Pater Avitius, De Oraculis et Vitibus, 1699; Dr. Bengo Collier's Christianity compared with Hindutum, Mohommedanism, the Antient Philosophy. &c.; C. P. Moreau sur les Oracles des Anciens, 1819.

ORANGE.

ORANGE. In the article Citrus the different species of this genus have been described, as well as the more remarkable varieties of the orange. It is there stated that India and China are probably the native countries of the orange tribe; and also that from the observations of Dr. Wallis, and other Indian botanists, the orange, the lemon, lime, and citron were all that could be distinguished as distinct species. Since the publication of Dr. Royle's Flora of India (Journ. As. Soc. India, p. 136), that he has found two plants, having the characters of the lemon and citron, growing wild in the jungly valleys at the foot of the Himalayas, in the tract between the Ganges and Jumna rivers, which, when transferred to gardens, retained the same characters. He further states that from the Rungepora forests a round kind of lime is obtained; while in those of Silhet, as well as on the sides of the Neelgherries, the orange is described as being found wild.

Captain Turner, in the account of his journey to Tibet, mention the orange as delicious; and Mr. Sanbersons, who accompanied him, describes many orange and lime trees as found at the foot of the hills in approaching Buxedwar. The various kinds of sweet lime and lemon found in Bengal are all of foreign origin, as it is usually called Batavi nimbo, or Batavian lemon. Hence there can be no doubt of the orange, lemon, lime, and citron being natives of India, though it is probable that some of the species are also indigenous in China, as is the case with many genera and species which are common to the Himalayan mountains and to the north-western coast of China. The lessening of commerce between Europe and the East has probably diminished the importation of many Indian plants into their dominions. The lemon and orange are common in Abyssinia. Bruce says the lemon is indigenous; and Alvarez speaks of lemons and oranges in parts which Bruce did not visit. (See the Travels of Alvarez.)

The orange has been adduced (Spectator, No. 155) as a rare instance of a plant vigorous enough to have at once beautiful shining leaves, fragrant flowers, and delicious nourishing fruit. But it is still more remarkable as a fruit of very warm southern countries which has been transferred to Europe and succeeds well in the open air in some parts of Italy. This is probably owing to its being a shrub which does not ripen its fruit in India until the cold weather of winter of that country. It is said that the orange would bear a greater degree of cold, and thus has been able to travel from India and China 'to the southern shores of Europe, and find a congenial climate in the equable and temperate climate of the Azores.' It is often made a subject of discussion whether the European oranges were known to the antients. There does not appear to be any evidence of sufficient weight in favour of the two former, but it is extremely probable that the citron was the Assyrian, or Egyptian, or Arabic, or Spanish orange, which, an authority has remarked it as worthy of notice that the Persian and Arabian authors, when describing them, do not give any Greek synonyms of either the orange or lemon. But of the citron they state maraseeza to be the Greek and atropha the Syrian name, the former of which has not yet been traced out, but the latter appears of the same origin as the Arabic ootraj. The Sanscrit name of the citron is Bieja poors, and the Persian fooranj; by the latter name it is also known in the north-western provinces of India. The orange-tree, being in still more southern latitudes, is an remarkable instance of one which gives employment to and forms even an article of commerce from the southern to the more northern European nations. Thus, it is exported from the southern coast of Spain to Lisbon and Portugal, in very large quantities from the Azores. Its cultivation is profitable not only on account of the esteem in which it is held, but also from the extreme profitiveness of the tree, so that the fruit is sold even in England at a price not much above sand sometimes even for less than our own apples and pears.

Oranges are imported, as well as lemons, packed in boxes, and wrapped up separately in paper. The entries for home consumption, in 1831 and 1832, as calculated by Mr. McCulloch, amounted on an average to 276,606 boxes a year, and assuming each box to contain 700 oranges and lemons, the numbers amounted to 189,424,000, and the duty, on an average of the above years, to 61,036l. a year.

Oranges have been first cultivated in Italy by Palladius, in the second century, but the orange not until the fourteenth century; it is probable, from the name, that it was first introduced by the Arabs into Spain, 'where fruits of fragrant blush on every tree,' and where are seen 'the orange trees that gild the greenest.' They bear the open air also at Nice, Genoa, and Naples, but at Florence and Milan, and often at Rome they require the temporary protection of a shed. They are usually planted in boxes, and removed from the conservatory in open ground in summer, in as well as in England; but since the introduction of the great variety of flowers from all countries, orangeries and fine specimens of orange and citron trees have been less in fashion, though none are more desirable on account of the emerald-green leaves, the grateful scent of the flowers, and the rich appearance of the fruit. They have been cultivated in England since 1892; and Mr. Loudon states that at the Wilderness, Kent, there are three trees in boxes, not sur-

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passed by any trees so grown in Europe; and that at Salt-
combe in Devonshire there are in a few gardens orange-
trees which have withstood the winter in the open air for
upwards of a hundred years. They are propagated either
by seeds, by cuttings, by layers, by grafting, or inoculation.
The planters of these seeds must have so long ago come to per-
fection, that they are seldom so propagated in England. The
most regular and garden-like culture is in the orange or-
chards at Neri, Monaco, and other places in the neighbour-
hood of Genoa. At the former are the orange nurseries
which first began the practice of supplying all the oranges
the cultivation is of a very indifferent character, but the fine
climate, strong clayey soil, and abundant manurings supply
the place of more skilful treatment. Budding and grafting
are performed in England at the usual season for such op-
eration, and may perhaps be performed at any time when
the sap is in motion.
Mr. Henderson, of Woodhall, one of the most
successful growers of the Citrus tribe, has given a full
description of the practices he adopts (Caled. Hort. Mem.,
iii. 306.; and London’s Encycl. of Gardening), and consi-
ders cuttings as the quickest mode of getting plants.
At Genoa and Florence the trees are grown in a strong yellow
clay which is richly manured. The French, in preparing a
compost, compensate for quantity by richness of manure.
Henderson, who is a part of light, fine mould
of ground that has not been cropped or manured for
many years, one part of peat earth as is used for
planting, two parts of river-sand, or pit-sand, if it be
tree to mineral substances, and one part of rotted hot-
bottom, two parts of rotted chips, and the
them all well together, so as to form a compact soil of uni-
form quality.

Though orange-trees grow exceedingly well in pots and
boxes, yet to have them produce the finest crop of fruit,
the plants are planted in the ground. The
standard cherry-trees in a conservatory, but the largest fruit
is produced when the trees are planted against the back wall
trellis of a narrow house.

Not the least of Nice and Poitoues of Ver-
sailles, Histoire Naturelle des Oranges, where 169 sorts are
described, and 105 of them figured; also that of Galileus,
Traité du genus Citrus, who has given an account of the
40 different kinds cultivated in Italy; and Mr. Loudon’s
Encyclopedia of Gardening.

ORANGE, a town in France, capital of an arrange-
ment, in the department of Vaucluse, on the road from
Paris to Avignon, Aix, and Marseille, 414 miles from Paris
through Auxerre and Lyon, in 44° 8’ or 44° 9’ N. lat. and
4° 46’ 20” W. long. on the Rhone.

This town existed in the Celtic and Roman periods, and
was called Arausio. It is mentioned by Strabo as one of the
towns of the Caures: Mela and Pliny call it Arausio
Secundanorum, and the latter describes it as a Roman
colony. Secundanorum has been derived from the
designation of the soldiers who were quartered or settled
as colonists. Orange contains more Roman antiquities
than most other towns in France, and may vie with the
cities of Italy. A triumphal arch, called by the inhabitants
of the district the arch of Marius, but which is probably of
the age of Augustus, stands in the middle of a field on the
north side of the town, near the road from Paris and Lyon:
it is about 60 feet high, and has three archways, of which
the middle one, intended for carriages, is larger than
the others. The cornice of the centre arch is richly sculp-
tured. Between the arches are fluted columns of the Corinthian
order, most of them much decayed through age, and others
are entirely destroyed. The attics are adorned with reliefs,
much given to the love of great architecture. The
name of these the name Mario, among others, inscribed on a
trumpet, has given rise to the general opinion as to the
person to whom the arch was erected. The sides of this
triumphal arch are decorated with columns and reliefs. An
ornamental arch, a kind of triumphal arch, forming the
scene or stage of a theatre, is in the centre of the town:
it is composed of large stones, joined without cement, and
is altogether a magnificent piece of masonry. The amphitheat-
re, of which the traces were visible till of late years,
has gradually disappeared, the stones having been carried
away to be used in the erection of new houses. Of an
aqueduct which brought water to the town there are no
remains, except at Vaison, which is several miles distant.
There are various fragments of antiquity in private

The Visigoths and Burgundians got possession of the
town on the downfall of the Roman empire, and from then
it passed to the Franks. In the middle ages it was the
capital of a principality, which, after passing through
different families, came to that of Nassau. On the death of
William III of England, who held it, it was claimed by
the king of Prussia as his heir; and the king of Prussia
sold it to the king of France in exchange for the town of
Guelder. It was annexed to Dauphine, and the establish-
ment of the division into departments. Th

There are several square townships, all
by the royal family of

The town of Orange is in a delightful country, and pres-
sents a pleasing appearance: it is however rather built
with narrow, crooked, and ill-paved streets. There are
several squares, and several handsome fountains.

There are several parish churches, one of which was
formerly a cathedral, for Orange was the seat of a bishop
before the Revolution; and a Protestant place of wor-
ship. Orange was the boldest of the communities. The
population, in 1831, was 6211 for the town, or 2143 for the
whole commune; in 1836, 8874 for the commune. The
inhabitants manufacture printed calicoes, handkerchiefs, and
thrown silk; and trade in corn of all kinds, fruits, wine,
and vegetables. There are five yearly fairs. The cultivation of
the corn commences in the neighbourhood of Orange.

The town several government offices, a high school, a society
of agriculture, science, and arts, and an hospital.

The Orange forest, of six thousand acres, is an area
377 square miles, and includes 48 communes. It is divided
into seven cantons, or districts, each under a justice of the
peace. The population, in 1831, was 66,663; in 1836 it
was 67,447. (Communication from Orange, b.c.)

ORANGE-UTAN, or ORANG OUTAN, names by
which the Pithecus Satyris of Geoffroy
(Sinna Satyris Linn.), the Red Orang, is now generally designated. In the

Three Arts are a Chimpanzee much wider, and relative
to this central form and its annexations. But the

is so interesting, that nothing but want of space, the
readers not zoological might think unjustifiably oyer-
prevent us from entering at large into the subject of
the

nothing from the figures of the
artists are in the habit of depicting this animal, as well as the
Chimpanzé, sometimes with and sometimes without
support, in an erect position—an unnatural attitude, against
which its whole form and structure militate. We may
thus bow with confidence to the iniquity of the species, with
figures of the skeletons of the young as adult, from Professor Owen; these skeletons will, at once
strike the observer with their admirable adaptation for
drummeate or chipped machinery and arboreal habits,
their inaptitude for erect progression.

Subgenus Pitheus.

Muzzle large, elongated, somewhat rounded in
the forehead sloping backwards; slight supraniary ridges,
strong sagittal and lateral in the number of ribs in the and
lower extremities. With regard to the number of

he observes that the figure of the adult skele-
tone which was taken by permission of the board of cur-

from the specimen described by Professor Owen, exhibits the abnormal number of five lumbar vertebrae instead of four, which
is the number existing in a
trunk of the mature Orang preserved in the museum of the

Orang in 1841, 1842, 1843, and 1844. Hence the

ZOological Society of London, and in the skeleton of

museum of comparative anatomy in the darwin's house.
The student will do well to study carefully the whole of the Professor's valuable remarks and beautifully accurate illustrations relating to the grove, or great tulip tree

Asia, and Africa, in the Transactions of the Zoological Society of London. The form of the living animal and its habits in captivity will have been familiar to most of our London readers from their opportunities of observing the department of ‘flying’ the Red Orangos, which died this year (1839) in the gardens of that Society in the Regent’s Park.

ORATORIO (Ital.), a sacred musical composition, consisting of airs, duets, &c., and choruses. The text is generally a dramatic poem, as Handel’s Samson and Camerata’s Sacrifice d’amor. Sometimes it takes the form of a narrative, as Israel in Egypt; and occasionally it is in a mixed kind, as Haydn’s Creation. The Messiah is a collection of passages from our received translation of the Scriptures.

Concerning the origin of the Oratorio, Dr. Brown, Sir John Hawkins, and others seem to have misunderstood the Père Menestrier, who, in his work Des Représentations en Musique, attributes to the pilgrims, on their return from the Holy Land, not the introduction of what we term oratorios, as those writers suppose, but of the sacred dramas called Mysteries. And the learned Jesuit is perhaps himself in error on this subject. It is War ton’s opinion that about the eighth century the merchants who frequented the fairs, employing every art to draw numbers together, were accustomed by jugglers, magicians, who were the source of great amusement to the people. The clergy, thinking that such entertainments tended to irreverence, proscribed them; but their censures and fulminations being disregarded, they took into their own hands the management of popular recreations—they turned actors—and, instead of profane mummeries, presented stories taken from legends or from the Bible. (History of Poetry.) Voltaire conjectures that religious dramas came from Constantinople, where, about the fourth century, Gregory of Nazianzus, an archbishop, and one of the fathers of the church, banished plays from the stage of that city, and introduced stories from the Old and New Testament. As the ancient Greek Tragedy was originally a religious representation, a transition was made on the same plan, and the choruses turned into Christian hymns. ‘This opinion,’ says the candid War ton, ‘will acquire probability, if we consider the early commercial intercourse between Italy and Constantinople.’ Admitting this, we need seek no further for the original source of the sacred musical drama.

As regards the recent introduction of the Oratorio, Crescimbeni, in his Commentari, tells us that it is attributable to San Filippo Neri, born in 1515, who, in his chapel,—‘nel suo oratorio’—after sermons and other devotions, in order to allure young people to pious offices, and to detain them from earthly concerns. And by this means, psalms sung by one or more voices. [NERI.] Bourd elot is rather more circumstantial on this subject. He says, S. Philippe de Nery, a native of Florence, founder, in 1546, of the congregation of the Priests of the Oratory in Italy, observing the taste and passion of the Romans for musical entertainments, determined to afford the nobles and people the means of enjoying them on Sundays and festivals in his church, and engaged for this purpose the ablest poets and composers, who produced dialogues in verse on the principal subjects of Scripture, which he caused to be performed by the most beautiful voices in Rome, accompanied by all sorts of instruments. These performances consisted of airs, duets, trios, and recitatives for four voices: the subjects were, Job and his Friends; the Prodigal Son received by his Father; the Angel Gabriel with the Virgin; and the Mystery of the Incarnation. Nothing was spared to render these attractive, the novelty and perfection whereof drew a crowd of auditors, who were delighted with the performances, and contributed largely by subscription money to the costs incurred. Hence are derived what we now call Oratorios, or sacred representations. (Histoire de la Musique, 1743, i. 256.) Some of these poems were printed, under the title of Laudis Spiritualis, and among the first authors of them were Agostoni, and the Father of the Zeal. One of the most remarkable is entitled Representazioni di Anima e di Corpo, di Signor Emilio del Cavallier, per recitar cantando. It was the first attempt in the recitative style, and performed in action, on a stage erected in the church of Santa Maria della Vallicella at Rome, with scenes, dances, &c., as appears from the editor’s dedication to Cardinal Aldobrandini, and the composer’s instructions for the performance. From the latter Dr. Burney (Hist., iv. 88) gives some curious extracts, among which are the following:—accompanied instruments—namely, a double lyre, a harpsichord, a large guitar, and two flutes—to be behind the scenes; but the performers are desired to have instruments in their hands, as the appearing to play would help the illusion.

The books of the words were printed. Instead of the modern overture, a madrigal, with all the parts doubled, and fully accompanied, is recommended.

When the curtain rises, two youths, who recite the prologue, appear. They are the son of the chorus master, and, has the note with which he is to begin given him by the instruments behind the scenes. The chorus is to be placed on the stage, part sitting and part standing; and when they sing they are to be in motion, with gestures.

Il Corpo (the body), at the words Si che hormai alma ri, throws away his ornaments. The World and Human Life are to be gaily dressed; and when divested of their trappings, are to appear poor and wretched; and finally dead carcasses.

The performance may conclude with or without a dance. If without, the last chorus is to be doubled in all its parts. But if a dance is preferred, a verse beginning ‘Chistri alissimi’ is to be sung, accompanied reverently by the choruses. During the dance, the four characters on the stage, to perform a ballet, saltato con capricio (danced with capers), without singing. They may sometimes use the galliard step, sometimes the canary, and sometimes the courant.

A name of Oratorios was given to these performances, because they owed their birth to the priests of the Oratory; we are however more inclined to derive the term from the place, the oratorio (oratorio, oratory, or small chapel), in which they were first heard. But the word does not appear to have been in use till after the year 1630, when Balducci applied it to two of his sacred poems.

The unfortunate Stradella was one of the first of those who distinguished themselves in this exalted kind of composition (Stradella); his Oratorio di S. Cro. Battista, produced about the year 1670, is analysed and marked by Burney (iv. 105). A fine chorus from this, in five parts, is printed in the 4th vol. of The Fitzwilliam Music. The increasing popularity of the sacred drama at length induced
of eminence to employ their pens in its service. Apostoloi Zeno, the Imperial poet-laureate, produced seventeen works on this kings, under the title of Asioni Score, the most of which were set by Caldarra, Imperial vice-chapel-master to Leopold I., whose reputation as a composer of sacred music deservedly stands high. The first of them, Sisara, was performed in 1717. Metastasio wrote seven Asioni, of which Caldarra set two, one of which, La Gran Corte, was introduced by Mr. Burney in the first of the Locke of Chando's (Pope's Timon) at Cannons. This, in 1713, was performed by the Children of the Chapel-Royal, at the house of their master, Bernard Gates. The next year it was publicly produced at the essays from the following advertisement in the Daily Journal:—By His Majesty's command, at the King's Theatre in the Haymarket, on Tuesday, the 2nd of May, will be performed the sacred story of Esther, an oratorio in English, formerly composed by Mr. Handel, and now revived by him, with some additions, and to be performed by a great number of voices and instruments. N.B. There will be no acting on the stage, but the house will be filled up in a decent manner for the audience. The success of this was of the most decided and encouraging kind: but for any interference of the Chapel-master's church, as inducement for first producing them, we refer to a former volume. [Handel] The custom of performing oratorios on the Wednesdays and Fridays in Lent is to be dated from 1737, from this being year, which was continued till a very recent period. Handel was succeeded in this musical speculation by his friend J. C. Smith, who was followed by Stanley and the elder Linley. [Stanley; Linley.] Linley and Dr. Arnold then in conjunction most successfully continued the handel's oratorios, which were continued by the latter, on the retirement of his colleague. [Arnold.] An opposition was now started by Ashley, who had been active as a subordinate agent at the Commemoration of Handel in 1784. This person soon transformed the performances into the most prosaic mss, at least retaining the original name; and from that time the oratorios began to degenerate; till at length, having been for some years carried on by different persons, and generally at a loss, they ceased altogether. Though it would be unjust not to admit that, even in such an unfavourable case, there were there two or three seasons that reflected some credit on the managers, in which The Messiah, with Mozart's added accompaniments, was first publicly produced in London at Drury-well's Mount Prod. The oratorio had nearly, or at all events, attained to its general theory of the art is founded. At a very early period, as appears from the 'Ilid,' the oratorical art was held in high estimation among the Greeks. According to Quintilian however nearly the first person by whom it was properly cultivated was Empedocles, the date of whose birth is unknown; but his flourishing period was about 450 B.C. Corax and Tisias, the earliest writers on the art, were both natives of Sicily (Quintil. Instit. Orat., iii. c. 1.) Contemporary with them was Gorgias, also of Sicily, who was distinguished by his eloquence that a golden statue was erected to him at Delphi. He, together with Protagoras of Abdera, Prodicus of Ceos, and Thrasyneuchus of Calchedon, are mentioned as the first who treated of common-places (communes loci). Another celebrated disciple of Gorgias was Isocrates, whom Cicero describes as the greatest master and teacher of the art. The treatise of Aristotle on Rhetoric is the oldest extant treatise on the rhetorical art, and one of the oratorical books which has been preserved from antient times. Demosthenes, who professedly enjoyed the instruction both of Isocrates and of Isæus, by incessant application overcame the obstacles which nature had placed in the way of his becoming an orator, and attained a degree of excellence in his art which...
Oratory, in twelve books, are generally regarded as the most complete work on the subject. Certain orations or decla-

mations ascribed to him are still in existence; but as they little accord with his own rules, their genuineness is not uni-

versally admitted. [Quintilian]

It must be understood that the result of eloquence in Greece

was of much longer duration than in Rome. Among the

Greeks it took its rise with republican institutions, and con-

tinued to flourish down to the time of Alexander the Great,

and when the empire of Alexander began to fall, ended with

the age of Cicero. The difference has been ascribed to the

more free and popular forms of government that obtained in

many Greek states, and this idea seems to receive counts-

enance from the fact that eloquence and the study of oration
to their pursuit were comparatively neglected in Rome;

other was destroyed. The age of rhetoricians succeeded

among the Greeks to that of the orators; and though or-

atory such as that of Demosthenes and Aeschines was no

longer permitted by circumstances, yet the teachers of

rhetoric among the Greeks cultivated the art as a discipline

and also employed it as a kind of theatrical exhibition.

Among this class of orators we may enumerate Aristides

and others. [Aristides.]

Archbishop of Cambray's opinion that the pro-

per method of forming a system of oratory is to collect it from

the best precepts of Aristotle, Cicero, Quintilian, and

Longinus. The opinion has been repeated and acted upon by

Ward, in one of the few systems which this country has

produced.

The elements of oratory are usually comprehended under

the four following divisions: invention, disposition, expres-

sion or language, and delivery. The first has respect to

the character of the thoughts, the second to the manner of

their expression; the third and fourth to words, sen-

tences, style, utterance, &c.

Besides the common observations that may be made on

any subject, there are peculiar ideas appropriate to the ex-

position and illustration of each peculiar subject, and among

these there are none which may be more appropriate than

others. These it is the business of the orator to discover,

and the discovery of them is termed invention.

Where argument is requisite, those arguments which are

most powerful ought to be adduced; where objections are

apt to arise, the orator must be prepared to meet them; and

the declaration of objections is resorted to, the incentives best adapted to excite the pas-

sions and engage them in behalf of the cause which the

speaker advocates must be brought forward. The Greek

rhetoricians often introduce several topics, under invention a

great variety of particulars intended to assist the orator, whatever might be

the matter on which he was required to employ his elo-

quence: these they called topics (troubles, the loci of Cicero,

Topisc, c. 2), and divided them into internal topics, or common-

places, and external topics, or particular ones. Com-

monplaces are such as are derived out of the subject itself. As given by

Cicero and Quintilian, they amount to sixteen in number.

These are—definition, enumeration, notation, genus, spec-

ies, antecedents, consequences, adjuncts, conjunctions, cause,

effect, the various types, similitude, dissimilitude, compar-

ison. The first three comprehend the whole thing to

which they have reference: definition explains the nature of a

thing; enumeration takes in all its parts; and notation

gives the signification of the words. The remaining thirteen,

some part of the thing spoken of, and the other its various

properties, circumstances, &c. Genus comprehends several species of things of different kinds. Species, all

individuals of the same kind. Antecedents are such things as were done or said in the same oration; none of them can perhaps be

long employed effectually without being reviewed by the

interchange with the others. The familiar, however, enter-

taining for awhile, is apt to appear vapid at last; the elegant

becomes insipid; and the sublime calls for an effort on the

part of the listener that can only be sustained for a short

time. In lengthened harangues therefore variety is requisite,

if the attention and interest of the hearers are to be

secured. In the choice of his style the orator must be

chiefly determined by the nature of the subject and the

character of the audience. Of a serious subject, to use lofty and figurative language would be

ridiculous, as to use mean and insignificant expressions on a

subject in itself noble and elevated would be offensive.

In like manner, to address in the same strain a plain

and scattered audience and a learned and dignified assembly

would be impertinent and absurd.

ascertained, are sufficient of themselves to determine any

result; the last are reduced to three, writings, witnesses,

and contracts.

The ancient rhetoricians paid great attention to what

were termed the states of a controversy, or the principal

points in dispute. These are all comprehended by Cicero

in the inquiries, whether a thing is, what it is, and how it is.

In addition to the general sources of argument furnished

by the topics, others more particular were specified, suit-

ed respectively to demonstrative, deliberative, and judicial

purposes.

When the materials of which an oration is to consist have

been procured, it next remains to arrange them in a proper

form. The thoughts may be excellent in themselves and in

relation to their proper subject; yet they must be brought together in a

connected and orderly shape, their arrangement being

not readily apparent, and certainly they will be deprived of

much of their force. Hence the second element of oratory, disposition, which concerns the right distribution of

the ideas. It is necessary that they should succeed each

other, if not by a natural connection, at least by an easy

sequence, and that the orator should proceed from what is

of less to what is of greater importance. Everything

unconsequential ought to be avoided, and care must be taken to leave the introduction of such, as

by the attainment of the purpose in view should obliterate or obscure the recollection of graver and more important con-

siderations previously advanced.

The orators differ also in the statement of the several parts

of which an oration consists. In Cicero's work concerning

the orator they are mentioned as five—the exordium, nar-

ration, division, confirmation, refutation, and conclusion: to

these may be added, if necessary, digression, transition,

and peroration. The consequence of the distribution of

these divisions should in every case be minutely observed.

The orator may on certain occasions, to be determined by

his own judgment, break forth without prenotory remark in the

middle of his subject. Cicero often cited oration against

the orator in question as an example of this, in which

he commences at once with an energy and vehemence that

would, under other circumstances, have been reserved for a

more advanced stage of his harangue.

Another object to be attended to by the orator is the lan-

guage and style of his oration. This falls under the head of

expression. This department of oratory comprehends
elegance, composition, dignity.

Elegance consists in perspicuity and purity. Low, obs-

cure, and foreign terms, to be avoided, as having a disagree-

able effect upon the hearer, and destitute of any use to

the object to which oratory is employed. Clearness, on

the contrary, must be constantly aimed at, insomuch as

without it the speaker will only be partially understood, and

he cannot hope to produce the full effect to which he may aspire.

Composition supplies rules for the formation of sentences

with the various members, words, and syllables of which they are made up. It is divided into period, order, juncture,

and number. The first relates to the structure of sentences;

the second, of parts of sentences, namely, words and mem-

bers; and the last two, of parts of words, or syllables and

letters.

Dignity consists in the proper use of tropes and figures.

Style is distinguished into the plain or familiar, the

middle or elegant, and the sublime. The characteristics of

each are sufficiently indicated in the terms by which they

are designated. All of them may with propriety find a

place in the same oration; none of them can perhaps be

long employed effectually without being reviewed by one

or other of the others. Antecedents are such things as

were done or said in the same oration; and the

comparison of the same with others. Adjuncts are adventitious

qualities of things and circumstances not necessarily connected with them. Com-

parisons are words having the same origin with one another, as

vice, vices, vice dom. A cause is by which anything

exists or is produced. Antecedent and consequent, or

contraries are things which, included in one genus, are the

farthest removed from each other, so that what is affirmed of the one is denied of the other. Opposites are things which,

though repugnant, are not directly contrary. Similitude and dissimilitude are the agreement or disagreement of

things in quality. Comparison traces contrarieties or re-

semblances in other particulars, as when a thing is compared with its greater or its equal or its

less.

External topics, or tests, are such as do not arise from

the thing itself, but are furnished from without: they are either divine or human. The first, where clearly

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Delivery includes everything connected with the utterance of speech, the modulation of the voice, gesture, &c.

The division of oratory by the ancient rhetoricians into the demonstrative or laudatory, the deliberative, and the judicial, has been admitted to. The classification is judicious and comprehends the several kinds of public speaking still in use. These may be conveniently arranged in the following order: the oratory of the Senate, of the Bar, of the Pulpit, and of the Mob. The oratory of the Senate comprehends the deliberative, in which the orator has not to contend with any of the remarks that have yet been made, and requires separate consideration. The oratory of the senate, or popular oratory, as it is sometimes termed, has respect generally to the welfare and honour of states, which, in ancient times, was of a different nature and importance. Accordingly this branch of oratory admits of a corresponding variety of style and character. It may be deliberative, or controversial, or declamatory, according to the subject about which it is occupied, or the end to be accomplished. There is perhaps no department of rhetorical excellence which it does not include, and nowhere therefore will the orator find a wider field for the exercise of his powers. It is supposed that in this case he addresses a well-instructed audience; and the exercise of talents is allowed to be the construction of his oration. He ought, it has been said, to unite the dignity of the statesman with the propriety of the scholar. It may be questioned whether, in the country at least, Demosthenes so far simulated the lastly, his orations, or the very essential element of good oratory. It is for the most part but sparingly resorted to, and its employment to the extent that would seem to be implied in the earnestness with which it was enjoined by the Grecian orator, has been considered a laudatory construction for the orator of the mob than the orator of the senate.

The oratory of the bar is the same as the judicial oratory of the ancients. It supposes two parties, plaintiff and defendant. The matters about which it is conversant are the rights of estates and the lives and liberties of individuals. The object of the orator is to secure success to the party whose interests he advocates, by proving, to the satisfaction of those by whom the cause is to be decided, the justice of his claims or the innocence of his conduct. His orator must be in a representative, and constructed with the design of producing conviction. The nature of such an oration may be illustrated by reference to the arguments laid down by the ancient rhetoricians as appropriate to judicial discourses in general.

For, there occurred a conjectural state of the question, in which it is inquired whether the party accused would, could, or did do what is laid to his charge; and next the definitive, where the proper name to be assigned is discussed; for upon the accusation, the criminality of the action may be disputed; and lastly, even granting this, the accused may be defended, and the offence palliated, by pleading the absence of willful design or bad intention. The province of the orator in the bar is manifestly more circumscribed than that of the senate. The forensic eloquence of the Greeks and Romans, and particularly the former, differed considerably from what eloquence must now be, and bore a closer resemblance to the senatorial. Among the Athenians at least the orator was not so much fettered by the provisions of a complex and intricate system of law, or by the existence of innumerable precedents. Besides, the judges in criminal causes were always far more numerous, so that the orator, instead of addressing himself to a small body. Even yet however, in all cases which involve great principles, or which possess intrinsic elements of interest, as well as in reply, the forensic orator has full opportunity for the display of the highest talents; the orator is by his orations; and of a large body. This was also the case at Rome, where the judges were frequently few in number, but the bystanders were many.

Some of the public orations of Demosthenes and Cicero are instances of ancient eloquence, senatorial and forensic. The eloquence of antiquity indeed generally occupies a more elevated place than that which can be claimed for modern eloquence. The one is the result of profound and incessant study; the other too frequently the result of hasty and extemporaneous effort.

It is incumbent which the orators of Greece and Rome were enabled to exercise, in the popular assemblies, in the senate, and in judicial cases, gave to oratory a high degree of importance as a branch of liberal education; and accordingly those who aspired to political distinction, either at Rome or at Athens, were occasionally orators. The emoluments of orators by the most assiduous industry, and by following the instruction of the best masters of their art. The useful labour which by Demosthenes overcame the impediments which nature seemed to have put in the way of his becoming a great orator. But it is clear, that the great and rare gifts of nature are more admired as one of the rare gifts of nature than sought after as one of the fruits of art. This seems the principal disadvantage of the orations transmitted to us from antiquity have been so rarely approached, and still more rarely equalled, even by the most distinguished modern speakers, and even in those states whose constitutional forms permit and invite the exercise of the powers of oratory.

The diffusion of opinions and arguments by means of the press has perhaps contributed in some degree to the present neglect of oratory; for a speaker is mainly known to the public that very small part of his oration is often more important is to read than to hear.

Still the power of oratory, in all modern constitutions, which the democratic element enters, is considerable enough to induce any person who has the requisite gifts of nature to fit himself for the acquisition of it. That success in oratory, even in the states whose who desire cannot find the opportunity of perfecting himself under a master. The orator who attains such excellence, as may, by practice in those places which under another system he would not have approached without the qualification of a lawyer, and by the exercise of talents for his profession by assiduous study, left Rome after he had been practising for two years at the bar, and had already begun to be known, for the purpose of improving himself under the best Grecian masters.

Pulpit oratory was unknown to the ancients, being the growth of later times. It has for its chief aim to impress men with their duty as moral and religious beings; to draw from vice and excite to the pursuit of virtue; to encourage the commonwealth in its policy, and to direct the nation to the topics with which it is conversant are of transcendent importance, and ought to be profoundly interesting so as to could find a more favourable sphere. It admits of very regular individuals and modified by particular circumstances, and the speeches which ought to be exhibited by the preacher are seriousness, solemnity, and fervour, combined with moral dignity. That few should have excelled in this department of eloquence must be matter of wonder, as well as of regret. No subjects are so easily susceptible of being made impressive as those which it is the duty of the preacher to proclaim; and every means ought to be employed by with the truths of revelation may be made to penetrate men's hearts and influence the heart of man.

Mob oratory is principally directed to the producing of excitement. Being intended to influence minds which are little cultivated or refined, it requires the plainest and least ornamental style. Here the maxim of Demosthenes for public speaking is applicable. "Every orator should be admitted at all his force. The utmost familiarity of manner is admissible; and it must be the care of the speaker to give utterance to his thoughts in brief sentences. He must place himself on a level with those whom he addresses, nor can he expect to gain their confidence without seeming to partake of their prejudices.

The oratory of the stage differs from every other kind of oratory. Its characteristic peculiarity is imitation. Its design is to represent human nature, as embodied in particular individuals and modified by particular circumstances. In order to excellence in this art, an extensive acquaintance with the general principles of human nature is required.
and also an accurate knowledge of their workings and developments in individual character. Success must be measured by the closeness of the resemblance. We now proceed to speak more particularly of that part of oratory which relates to delivery or, as we shall here term it, Eloquence.

Eloquence is that pronunciation which is given to words when they are arranged into sentences and form discourse. It comprises the upward and downward, or ascending and descending, movement of the voice, with the proper accompaniments of countenance and gesture. The art of eloquence therefore may be defined to be that system of rules which teaches us to pronounce written or extemporaneous composition with propriety, beauty, and force. To this definition, good reading or speaking may be considered as that species of delivery which not only expresses the sense of the words so as to be barely understood, but at the same time gives them all the force, beauty, and variety of which they are capable.

The Greeks and Romans paid great attention to the study of eloquence, and there can be no doubt that their most celebrated orators attained to a high degree of excellence. Aristotle, Cicero, and Flaccus, orators, gave nothing on record which shows that they had made a minute analysis of the speaking voice. They did indeed distinguish its different qualities by such terms as hard, smooth, sharp, clear, hoarse, full, slender, flowing, flexible, and so forth; but the exact science of the voice, that is, the heavy and light in syllabic utterance: they knew the time of the voice, and regarded its quantities in pronunciation: they gave to loud and soft appropriate places in speech: they perceived the existence of pitch, or variation of the voice, but they did not give it the consideration in the pronunciation of individual sounds are by a concrete or continuous slide of the voice, as distinguished from the discrete note produced on musical instruments. They designated the pitch of vocal sounds by the term accent, as the heights of sounds, the note, the air, and the circumflex, which signified respectively the rise, the fall, and the turn of the voice, or union of acute and grave on the same syllable. But beyond this they did not go, and it is a curious modern error to give that clear and full description of the elements of the voice, on which alone any definite instruction can be founded. For the advance which has been made in elocutionary science in modern times we are indebted to the useful labours of Steele, Ollier, Walker, Belcher, Cibber, and Rush, especially to the last, who has done much to perfect what was begun by others, and whose 'Philosophy of the Human Voice' contains a more minute and satisfactory analysis of the subject than is to be found in any other work. In his book chiefly we shall borrow the substance of this article.

When the letter a, as heard in the word day, is pronounced simply as an alphabetic element, without intoneness or emotion, and as if it were a continuation and not a close and separation of sounds, then two important facts are to be considered: the first is that the nominal sound of this letter, and all similar letters, consists of an acute and grave or a rising and falling movement through the space of a tone, the beginning of the a and the termination of the a being severally the inferior and superior extremes of that tone. This sound commences full and swelling, and gradually decreases in its upward movement, till it dies away in the upper extremity of the tone, having the increments of time and rise, and the decrement of fullness, equally progressive. The first portion therefore, or base of this sound, is called the radical movement and the second portion the augmenting movement. This sound is called a concrete, or slide, to distinguish it from musical sounds, which (in their pure character) continue for a given space of time on a certain point of the scale, and then leap, as we do (discretely), to another point either higher or lower. These slides may extend through the scale of a tone, or they may be carried up to any point on the scale to which the voice can attain, these intervals which are the most distinctly recognizable by the ear and the most easy of execution being the tone (or second), the third, the fifth, and the octave. The direction also which they may take be either upwards or downwards, the full opening radical however always occupying the first place, and the vanish the second. It also frequently happens that there is a union of the upward and downward, or of the acute and grave tones and upward movement, on the same syllable; these are called waves or circumflexes; they may rise and fall through the extent of a tone, or of a third, or of any wider interval of the scale; they are then called direct waves or they may fall and rise through the same extent of pitch, whereas in the called indirect waves they may be equal, having their constituent rise and fall through the same extent of pitch; or they may be unequal, having either the ascent or the descent longer than the other part.

The succession of the seven sounds of any one series, to which the octa is usually added, is called the Natural or Diatonic Scale. In speech, as in music, it consists of five tones and two semitones, the latter being the spaces between its third and fourth and its seventh and eighth degrees. But the succession of the latter is also by semitones; these have only half the extent of pitch which the full tones have: like them, they may be carried upwards or downwards, and they often occur in the form of waves. They serve for the expression of animal distress.

The succession of the concrete sounds may be exhibited under still more minute divisions. These consist of a transition from place to place in pitch, over intervals much smaller than a semitone, each point being, as it were, rapidly touched by a short and abrupt emission of voice. This description must be here made by a concrete or a semitone, which is called gurgling, and by the neighing of a horse. The analogy here regards principally the momentary duration, frequency, and abruptness of sound, for the gurgling is generally made by a quick iteration in one unvarying line of pitch, whereas in the scale now under consideration each successive pulse of sound is taken at a minute interval above the last, till the series reaches the octave. The precise extent of these small intervals it is very difficult to estimate. They may be simply those that are the dimensions of the intervals of the scale, provided they do not lose their distinctive character of momentary time and abruptness of utterance. These concretes are used both in laughter and in crying. In the descending scale, the direction not only of the semitones but of the form of the sounds is the same as the direction of the movements of pitch through the several scales.

There are then four scales of pitch for the speaking voice:

1. The Concrete, in which from the outset to the termination of the voice there is no appreciable interval, or interruption of continuity.
2. The Diatonic, the transitions of which are principally by whole tones.
3. The Semitonic, or Chromatic, consisting of an entire succession of semitones.
4. The Tremolous, consisting of minute intervals smaller than the semitone.

The alphabet is, in our grammars, usually divided into vowels, consonants, nasals, and semivowels; but it will be more useful to class the elements according to their use in intonation. As the number of these elementary sounds in the English language exceeds the literal signs, and some of the letters are made to represent various sounds without any rule of discrimination, it is necessary to use short words of known pronunciation, containing the elementary sounds, with the letters which represent them marked in italics. The elements of articulation are thirty-five, and they may be arranged under three general heads.

1. The first division embraces those sounds which display
the properties of the radical and vanish in the most perfect manner. They are twelve in number, and are heard in the usual sound of the separated italics in the following words:—

The next division includes a number of sounds possessing variously among themselves properties analogous to those of the tonics, but differing in degree. They amount to fourteen, denoted by the three last italics in the following words:—

From their inferiority to the tonics in all the emphatic and elegant purposes of speech, whilst they admit in some measure of being intoned, or carried concretely through the intervals of pitch, they are called subtomic sounds.

The remaining nine elements are aspirations, and have not that sort of sound which is called vocality. They are produced by the current of the breath passing through certain positions of the enunciative organs. They are heard in the words—

and, that, which.

The name of Abrupt sounds is also given to three of the subtomics and three of the atomics, namely, b, d, g, p, t, h, since they confer an expressive character on the following initials. The sound of the voice, the character, is still preserved while the mutable and the intonable in some cases almost lose their identity by too great an addition to their time. The use of these distinctions will appear in the sequel.

Thus much having been premised, it will be the more easy to understand the general division of vocal sound. All the varieties of sound in the human voice may be referred to the following general heads:


The terms by which the Quality or kind of voice is distinguished are rough, smooth, harsh, full, thin, slender, soft, musical, and some others of the same metaphorical structure.

There are three different sorts of voice, the natural, the falsetto, and the organum, to which must be added the whisper, which, strictly speaking, is not voice. The natural is that which we employ in ordinary speech. It includes a range of pitch from the lowest utterable sound up to that point at which the voice is said to break. At this point the natural voice ceases, and the higher parts of the scale are made by a shriller kind, called the falsetto, of which the cry, the scream, the yell, and all shrillness are various modes. The name of organum (from *orandum*) is given to that mode or improved manner of uttering the elements, which exhibits them with a fulness, clearness, strength, softness, and a ringing or musical quality rarely heard in ordinary speech, and which is never found in its highest excellence except as the effect of long and careful cultivation. This voice is highly agreeable to the ear;

The voice is, however, usually so delighted with the brilliancy of its effects that it is very apt to become a favorite. It has been alleged that the above-mentioned qualities are so strong and so peculiar to the voice that it is impossible to distinguish them from each other. This is not the case. They are distinguished from each other in various ways, and, though the voice is capable of producing all the qualities, it is not always so produced. It is not always possible to produce all the qualities at the same time.

The melody of the cadence, as distinguished from the current melody, is formed on the two or three last tones of a sentence, and is effected by a descent through three conjunct degrees, with a downward consonant always on the last, and frequently on the preceding. The form of the cadence has been illustrated in the preceding sections, and the notation of which has been given above; but there are
vibrations according to the component parts and the sense.

Plain declarative sentences generally take one form or other of the cadence, in order to mark the satisfactory close of the period; and downward concretes are also frequently introduced into what are called loose sentences, to denote that the sense is completed, and that the succeeding clause does not modify that which precedes it. Where, on the contrary, the sense is suspended, as it most commonly is in the middle of a sentence, the concretes must have an upward direction.

For conveying the peculiarities of sentiment or feeling, or, in other words, for the expression of speech, a much more varied apparatus is necessary. This expression is affected by quality, time, pause, melody, pitch, the waves, tones, of sound, the tension, force, and rhythm, all which are only so many forms of the four general divisions of vocal sound above specified.

I. Most of the elements which range under the general head of Quality have already been enumerated. It must however be remarked that they are susceptible of combination with the various modes and degrees of force, time, and pitch. In short, quality of voice must necessarily be united with some of the degrees of the other genera; for, whatever be the kind, it will be either strong or weak; its time must be long or short; and it must be subject of some definite radical or concrete pitch. Certain qualities of the voice are however exclusively con genital with particular conditions of these other accidents; thus smoothness will more generally affect the power of duration;

II. Time.—The degrees of duration of the voice represented by the terms long, short, and the rate by quick and slow, are among the most effective means of expression; rage, mirth, raillery, and impiety affecting a quick time; and slowness being the symbol of sorrow, grief, respect, veneration, dignity, apathy, contrition, and all other sentiments which embrace the idea of deliberation. A slow time of discourse, if not made by long quantities on single syllables, would be offensive from its pauses; these two forms, then, necessarily involve one another. Slowness of time and long quantity are generally joined with the element of the wave, since the return, or contrary flexure of intervals, is one of the means for producing an extension of time without destroying the equable concrete of speech, or, in other words, without passing into long.

The wave of a tone will be perceived in the dignified and appropriate utterance of the syllables marked in italics in the following lines:

Pardon me, thou bleeding piece of earth,
This is the hand that thine own bosom stieth,
'Tis thee decked, and to thee I attribute
Hail, light, offspring of heav'n, first-born, Gr of the eternal co-eternal beam,
May I express thee, and what god or man?

III. The use of Poesy for the more conspicuous display of sense and sentiment, by separating certain words or aggregates of words from each other, is of great consequence in eloquence, but cannot be gone into at length in this article. To these pauses the grammatical points are by no means a sufficient guide.

IV. The comprehensive subject of Melody would properly represent it as produced by a variation in the time, pauses, force, and pitch of the voice, since the well-appointed uses and dispositions of these accidents make up the agreeable impression of a speech; but we use it here as relating solely to the successions of radical pitch. Under this head it may be remarked that a predominance of the monotone is suited to feelings of dignity, grief, tenderness, solemnity, and serious adoration; that the alternate phrase well describes the animated excitement necessarily produced by the rapid succession of incident; and that a progression gradually rising and falling through the whole compass of the voice corresponds with a wide variation of force in the sentiment.

For illustrations of these modes see Dr. Rush's Philosophy of Lord Byron's "Childe Harold's Pilgrimage to the Grecian.'

V. Pitch.—Discrete pitch is illustrated by the word must in the following passage. As it is a syllable which does not admit of prolongation, it is raised discretely a third above the preceding:

As beauty is impe-tu-o-nal e-wards from the tomb.

If we suppose that the following words are spoken interrogatively, and that they express surprise, the concrete rising fifth must be given to the emphatic syllables:

Give Brutus a statue with his ancestors?

If, on the other hand, the line be read as a command, the direction of the concretes will be downwards.

On the word know, in the following clause, not only does the voice descend concretely a third or a fifth, but the descent begins discretely a third above the preceding word:

We know what we worship; for salvation is of the Jews.

As the diatonic melody is suited to plain narration and description, so will the emphasis be the more strongly marked in proportion to the wider extent of the intervals, whether of concrete or of discrete pitch, which are employed. It may also be remarked in general, that the upward concretes denote interrogation, doubt, or what is concessive, conditional, hypothetical; the downward concretes denote what is strong, certain, authoritative, as also wonder, admiration, surprise, and exclamation, when not conjoined with an interrogative meaning.

VI. The Wave is a very frequent element of expression, and performs high functions in speech. In its minor forms it is used to give length and emphasis to syllables and dignity to utterance; in its wider intervals it is admirably expressive of irony and derision. Thus the irony of the following passage can be brought out only by the indirect wave of a fifth in both places in which it occurs:

But it is foolish in us to compare Darius Africano and ourselves with Clohis, and all our other calamities were tolerable, but no one can patiently hear the death of Clohis.

VII. The Semitones.—These are used for the expression of complaint, pity, grief, plaintive supplication, and other sentiments congenial with these. The intonation by the concrete of two or three semitones is used for animal distress. It affects generally a slow time and long quantity in utterance, and is therefore most commonly heard in the form of the wave. The interjective exclamations of pain, grief, love, and compassion, are prolongations of the Tonic elements on this interval; but it may be executed on the short time of immutable syllables, such as cap.

The private utterance of the following line will exhibit the wave of the semitone on the most important syllables, poor and old being distinguished by direct unequal waves of the same interval. It must be taken as an isolated line, and not in conjunction with the verse of which it forms part:

By the sorrow of a poor old man.

VIII. The Tremor.—When the tremulous function is made through the second, third, fifth, or octave, or through the wave of these intervals, it joins the sentiment of derision, mirth, joy, or exultation; but that of interrogation, surprise, command, or scorn, conveyed by the smooth concrete of those intervals. In short, it is the introduction into speech of what is transferable in the function of laughter, and it adds thereto all the meaning and force of its satisfaction.

Thus "Those are the ruins of the noblest man, That ever lived in the tide of times."

There is a sentiment of exultation and a superabundance of compliment in this construction, which cannot be properly expressed by the smooth movement of the concrete; but if the first syllable of the emphatic word noblest be uttered with the tremulous intonation of the wave of the third or second, this will give the vocal consummation to the feeling which suggests the excessive measure of the praise.

The chuckle is an example of a somewhat similar application.

When the tremor is formed of a single tonic, in the semitone or its waves, it constitutes the function of crying; and when employed in the syllabic intonation of the chromatic..."
melody, it sets a more marked distinction on those emphatic words which express the sentiments of tenderness, grief, surprise, or other emotions of feeling. This may be illustrated on the emphatic syllables of the line just quoted:—

--- Pity the sorrows, &c.

IX. The application of the different degrees of Force to the purposes of expression is almost too obvious to require the attention of the musician. It is spoken of as an effect which is picturized by loudness, and meanness by abatement of force: secrecy muffles the voice against discovery, and doubt adopts the subterfuge of an undertone. Certainty and anger assume force and strength. All sentiments which are uncovers or disgraceful smooth the voice into softer degrees, in the desire to conceal even the voluntary utterance of them. Joy is loud, and so are bodily pain, fear, and terror.

Such are some of the uses of force when applied to particulars, or to not mainl dependant on custom or on the genius of any language whatever, but arises from the very manner in which speech is produced, and is as involuntary as the throb or remission of the pulse, or the inhaling and expiration of the breath. In the formation of speech there is a regular action and reaction of the organs which produce it. To form a heavy syllable, or one which has accentual stress upon it, these organs are necessarily placed in a certain position; and from their very nature it is necessary that, before they form another heavy syllable, they should recover their first position; but the time which is occupied in this recovery of their position is not always lost to the purposes of speech, for it may be filled up with one or more syllables, which have no stress, and which are therefore very properly denominated light; if it is not filled up in this way it is a pause or rest. To illustrate this, let us take the words—

One, two, three, four, five.

These may, if distinctly and deliberately pronounced, have two peculiarities; each of them gives to the organic structure or emphasis, or produces, in that order, a pause after it. Let these pauses be alternated with the light syllable and; and then the two lines, viz.:—

One and two and three and four and five and

and

will be of exactly the same length as to time in music, or rhythm in speech, the syllable and occupying no more time than what necessarily intervenes between the syllables under organic emphasis.

This alternate action and reaction of the organs of speech was called by the ancients by the significant terms Thesis and Anti thesis, or former denoting the setting down of a syllable, as setting down the foot in walking; the latter denoting the raising of it up, like the lifting of the foot from the ground; the former producing the heavy syllables, the latter the light ones.

The weight of syllables, or in other words, the stress with which they are enunciated, must be carefully distinguished from their quantity, since the weight or stress with which the syllable is uttered does not always correspond with the relative time which they occupy. Thus in the word pensiveness, the syllable pen is the heavier, but it is not longer than the syllable size. So also in the word integer, there is an equality of time in the two syllables, but not of weight. In banish, banner, these, the first syllable is heavy but short; in pensive, pensive, it is both heavy and long; and the same observation applies to misery, middle, mistress, compared with misier, minor, mine.

Those emphatical divisions into which, from the very nature of the organs, all speech naturally falls, are called by writers on this subject, cadences. Every full spoken cadence consists of a heavy syllable, and of one or more light ones, but partly possible, it would sometimes be substituted to make up the time which any of these syllables would occupy. Measure, or metre, therefore in speech naturally distributes itself into two kinds: common measure, which, according to Mr Steele, is the allotment of two crotchetts or their equivalents to each cadence; and triple measure, which is the allotment of three crotchetts or their equivalents to each cadence; emphasis however will sometimes prolong the duration of a cadence beyond the allotted time, just as an ad libitum is allowed in solos in music. Without entering further into minute distinctions or exceptions, the following may serve as specimens of each kind. This mark † indicates a short pause, this ‡ a longer, and this § a still longer one:—

Common Measure.

1. Straight mine eyes! hath sought new pleasures.

2. Where the landscape shrinks, and the mountain serves to hold the gale.

3. Whose artless songs, one night last, I heard on yon high eminence.

4. The labouring clock does often rest.

Triple Measure.

1. At the close of the day when the hasting is still.

2. When I sought the forest I heard on the hill.

3. And to bear the utmost burden of all.

If this system of measuring verse were adopted, the prosody not only of our own but of the learned languages would be greatly simplified. The list of feet which is usually given at the beginning of the "Gradus ad Parnassum," would be reduced to four or five; we should hear of no such unnatural feet as trochee, spondeon, or spondee; but the syllable at the beginning of an accented line would either itself form a cadence, or would be the close of a cadence, of which a pause or the last syllable of the preceding line would form the commencement. Those lines of Alexander would then be reduced to the three cadences, thus:—

[Note: The text continues with more detailed discussion of musical and poetic structures.]
On the other hand, a succession of heavy syllables, with a pause intervening, is one of the most expressive forms of emphasis both in prose and verse. Thus the following line from Milton would lose all its force, if read so as to form only the usual number of six cadences: emphasis prolongs it to eight, thus:—

'Rocky, lone, lonesome, the, end, and, shade of, death.'

Independently of its agreeable effect upon the ear, and its power as an element of expression, there can be no doubt that, as rhythm arises from the very manner in which speech is produced by the organs, he who speaks agreeably to his structures of voice, the practice of reading or speaking aloud, with a due attention to the rhythm, may even be recommended as a means of improving the health, since it brings into regular and natural action the muscles of the face and of the throat, and the challenge and fortitude and permanently to remove impediments of speech can be successful, which is not based on the principle here developed.

(A succinct account of rhythm will be found in Wood's The Principles of Rhythm; in Roe's Principles of Rhythm; and in Chapman's Music, Melody, and Rhythm of the English Language, 6vo, Edinburgh, 1819; as well as in his Rhythmic Grammar, 12mo, 1821.)

Method of Training and Strengthening the Voice.—In order to read and speak well, it is necessary to have all the vocal elements under complete command, so that they may be used whenever they are necessary, in a vivid and elegant delineation of the sense and sentiment of discourse. The student therefore should first practise on the thirty-five alphabetic elements, in order to ensure a true and easy execution of their unmixed sounds. This will be of value whatever words in which they are used, and if, when pronounced singly, the elements will receive a concentration of the organic effort, which will give them a clearness of sound and a definite outline, if we may so speak, at their extremes, making a fine preparation for their distinct and separate pronunciation in the compounds which follow. He should then take one or more of the tonic elements, and carry it through all the degrees of the diatonic and concrete scales, both in an upward and a downward direction, and then take some one familiar sentence, and practise upon it with every variety of intonation of which it will admit. He should afterwards run through the phrases of melody, and the forms of the cadence; and lastly he should recite, with all the force that he can command, some passage which requires the great exertion of the voice. If he would acquire power and volume of utterance, he must practise in the open air, with his face to the wind, his body perfectly erect, his chest expanded, his tongue retracted and depressed, and the cavity of his mouth well enlarged; while it is unnecessary to add that which improves the general tone of the health will proportionately affect the voice. If to this elementary practice the student add a careful and discriminating analysis of some of the best pieces which our language contains, both in prose and verse, and he strenuously endeavour to apply to them all the scientific principles which he has learned, there can be no doubt that he will acquire a manner of delivery, which will do ample justice to any subject on which he may be called to exercise his faculties.

Intimately connected with the subject of delivery is that of Action. Orationical action has been defined to be the just and elegant adaptation of every part of the body to the nature and spirit of what is being spoken. As every man who feels his subject will necessarily have some action, it is of consequence that it should be graceful and significant. The first point to be attained is to avoid awkward habits, such as resting the chief weight of the body on one leg, or leaning, at the same time, on the other swing and fro, jerking forward the upper part of the body on every emphatic word, keeping the elbows pinned to the sides, and sawing the air with one hand with one unvaried and ungraceful motion. As for the attainment of excellence, it must be sought by studying the specific rules of the various treatises on the subject, but the following general directions will be found to embrace much that is useful: 'Keep the trunk of the body erect; let your hands be at liberty; feel your subject, and the action will come; reflecting at the same time that the right hand is essentially the instrument of action, and that the left should be used only as a subordinate to it.' As gesture is used for the illustration and enforcement of language, so it should be limited in its application to such words and passages as admit of or require it. A judicious speaker will not only adapt the general action of his body to the object of his discourse, but, when for any reason or other, he will reserve his gesture, or at least the force and ornament of it, for those parts of his discourse for which he also reserves his boldest thoughts and his most brilliant expression. The whole time and the individual directions will be found in Austin's Chironomia, London, 4to, 1806; see also Chapman's Music of the English Language, p. 112; and Walker's Elements of Eloquence.

ORB, ORBIT. The circumference of a circle or of any round body; orbs among the ancient astronomers meant the vast crystal spheres in which the heavenly bodies were supposed to be placed and with which they revolved; hence orb came to be used for a sphere, as the instantaneous element. If, we will not here means the relative path [Morton] in which a planet travels round the sun or a satellite round its primary.

We should perhaps rather say that by the orbit of a planet, technically speaking, is meant the approximate path, circular or elliptical, in which the heavenly body is supposed to move without sensible error. Thus when for some particular purpose, as the explanation of the seasons, we say the earth moves round the sun in a circle, we make an orbit which is exact enough for that purpose; and when, to explain the revolution of the earth, we say we should be able to give a more exact supposition, that of an elliptic motion, we are still said to speak of an orbit of the earth. But if we were to speak of the closely-folded interlacing spiral in which the centre of the earth actually moves round the sun, we should say that the orbit is helical, and if we will not here means the relative path [Morton] in which a planet travels round the sun or a satellite round its primary.

The elements of the orbit are the quantities by which the position and magnitude of the (pro tempore) orbit are fixed, such as the major axis and eccentricity, which determine its magnitude; the longitude of the node and inclination of its plane to the ecliptic, which define its position of that plane in space; and the longitude of the perihelion, which determines the direction of the major axis. One more determining quantity is tacitly supplied in the condition that one focus of the ellipse is always to be in the centre of the sun. The only remaining element is the periodic time of the planet, or its time of revolution round the sun; this however is not a separate element for each planet, but all the other elements being given, is known for every planet when it is known for any one.

ORBITELLO. [Siena, Province of.]

ORBITOLITES. [Milleporid.]

ORCANNETTIN, the colouring matter of alkanet root (orcanthus, lithoperum, tinctorium). It was extracted from the root by boiling in water, and when treating it with ether, and evaporating the solution. This substance has a resinous appearance, is fusible at 140° Fahr., and is of so deep a colour as to appear black. Water dissolves a mere trace of it, but alcohol and ether become red colour by that means, which are also coloured by it. Acidic acid and the alkalies dissolve it, the latter forming blue solutions; acetate of lead precipitates it blue, chloride of tin crimson, and the salts of iron and of alumina of a violet colour.

ORCHARD. Apples, pears, and cherries are the fruits principally cultivated in orchards. The term orchard is likewise used to signify enclosures in which filberts or walnuts are grown: the word yard is commonly used for similar spaces appropriated to the production of figs and grapes.

Orchards of apples and pears are more numerous, because more productive, on the old and new red-sandstone forma-
tions than on any other strata; a very large proportion of all the cider and perry that is manufactured is grown upon these soils. The principal orchards of England are in Devonshire, Somersetshire, Gloucester, Herefordshire, and Wiltshire; on the continent, in Normandy and in the vale of St. Vallant; and in America, in the New England states.

For an orchard of apple-trees, a deep unfruitful soil should be selected, in a situation sheltered from the north and northern winds, and open to the south and south-west. A bank is preferable to a low spot, for not only is the blossom more liable to be injured by spring frosts where fogs and damp prevail, but the trees themselves become mossy, and perish from excess of moisture. Dr. Lindley (Lindley's "Treatise on Orchard and Kitchen Gardens," p. 117) recommends an early and effectual preparation of the soil, and the early transplanting of the trees: 'They cannot be removed from the nursery too soon after the wood has become ripe and the leaves have fallen off; for between this time and the winter many of them will make fresh roots, and be prepared to push forth their young shoots with more vigour in the spring than those whose transplanting has been deferred till a late period of the season.' Young trees will require to be watered if a dry spring should succeed the autumnal rains, and their roots should be occasionally dug round and manured. Pruning is advantageous to young trees when skillfully performed, for it is desirable that branches should not be crowded together, especially any of the largest of the tree; the opinion that it is seldom beneficial to old trees, excepting for the removal of misfitte; and recommend that under no circumstances should a pruner be employed who amputates large limbs and leaves wounds which injure the albumen or sap-wood but which the atmosphere and produce cankers or discoloration of the stem or principal branches. It may frequently be useful in an exposed situation to plant two or three rows of pear-trees to shelter the apple-trees from the prevailing storms; as pear-trees are on the whole less liable to suffer from winds than their more brittle kindred. The transplanting of heavy cattle is at all times injurious to orchards.

For pear-orchards a lighter soil is desirable than for apples; the same rules may be observed for their planting and preservation. Washes for the destruction of the eggs of insects are made use of, in the theatre of the orchard and to root out weeds. The planting of lime and other trees round the orchard, especially of hornbeam and ash, impedes the access of cutworms.

The principal cherry-orchards in England are in Buckinghamshire and Kent; from the latter county a large supply is sent to the London markets. In Alsace, Wurttemberg, Berne, and Basle, 'kirschwasser,' an ordinary spirit, is distilled from cherries. There are likewise orchards of a small acid cherry called 'morenaca' in the neighbourhood of Trieste, and near Zara in Dalmatia, from which Maraschino is derived: in the Bergstrasse, near Heidelberg, there are cherry-orchards which furnish an early supply to the London markets.


ORCHESTRA (Gr. ὀρχήστρα, which contains the same element as the verb ὀρχήσω, to dance), that part of the Greek theatre in which the chorus was situated—where the dances were performed—where the modern orchestra is the place in the theatre allotted to the instrumental band, and that portion of a concert-room which is assigned to the musical performers, both instrumental and vocal. We not only apply the word to the place set apart for the musicians, but often use it to designate the whole of them collectively; in which case, orchestra and band are treated as synonymous terms.

Till the end of the seventeenth century, or the beginning of the last, the instrumental performers of our theatres were stationed in a box on the side of the stage, and out of view of the greater portion of the spectators. They were then few in number. But, however desirable in some respects, it would be impossible so to dispose of the large bands of the present day; and all things considered, they could not be placed better than where they now are—just below the stage, so as not to interrupt the sight, and between the singer and the audience, thus enabling the former to have in view the conductor and leader, a matter of great importance in the musical drama, where all is sung by memory.
the like nature in foreign countries. Of these things some idea may be formed by the following cut, where I represents Oncidium rufum, or the Frog Oncidium, so called because its lip bears at its base the figure of a frog couchant; 2. The roots of the Specie Holy Ghost plant of Panama, in whose flower we find the likeness of a dove in the act of descending upon the lip; 3. Prescotta colorata, whose lip is a fleshy hood; 4. Gongora fulea; 5. Ctyrhea tritris; 6. Cynodes ventriculosum, singularly like the foregoing to the point of having the same kind of flower; 7. Oncidium pulvinitum; 8. Bolbophyllum barbigerum; 9. Catisum viride; and 10, Persisteria cerina.

In consequence of their singular forms, their gay colours, and the delicious fragrance of many of these plants, they have been cultivated by a new botanical garden in this country and abroad, as has been stated in a former article [EPIDENES], to which we refer for information concerning their natural habits. In this place we proceed to give such a technical account of the structure of the order as will enable the reader to understand the principles of their classification, and to reconcile their structure, irregular as it is, with regular types observable in other parts of the vegetable kingdom.

The orchids inhabit all parts of the world, except those which are excessively dry or excessively cold, both of which appear uncongenial to their nature, and they are most abundant in such as have an equable mild climate, moist and warm during the greater part of the year. Thus we find them in the tropics, or at the base of mountains of considerable elevation, or at the foot of mountains in the vicinity of the Equator, and in the extreme north of Russia, in Asia, and in North America. The flowers of the terrestrial species, that is to say, such as grow exclusively in the ground, are rare and unknown: in colder countries, on the contrary, the former are unknown and the latter only rarely seen. In other cases the orchids flourish only where the soil is rich, and the plants are therefore numerous. In such cases the pseudobulbs are entirely analogous to the scaly bud found upon the end of the tubercular root of an Ophryدة; and the rhizomes in like manner is of the same nature as the root of the common grass. We may even say that in such a plant; but pseudobulbs, in consequence of their perennial nature, are more completely formed, often have a woody texture, generally a hard epidermis, assume various singular or other figures, and develop a definite number of leaves. This is the common term of the growth of the genera Maxillaria, Stanhopea, and many others. Pseudobulbs of this kind are always composed of cellular tissue, containing a great quantity of mucilage (and amylaceous granules) traversed by simple fibrous vascular cords, and hollowed into an indistinct kind of root. In other cases the rhizomas, instead of having pseudobulbs, form short stems which are terminated by one or more leaves, as in Pleurothallis and its allies, and in the genus Cattleya and others; these differ from the pseudobulbs in the same genus, as in Dendrobium and its allies. In a large family the tubercles and terminal buds, or of creeping rhizomata and pseudobulbs, is the most common tendency of the order, but not the only one; in Enlophia, Vanda, and others, the rhizome simulates simply the form of an ordinary tube; and in Vanille, Dendrobium, Vanda, and others of a similar nature, there is no rhizoma, but the stem lengthens as in common plants, from which there is nothing to distinguish it; some of the species of Dendro- bium take the pseudobulb in the form of a kind of frond, one end of their stem, and the common state at the other, as D. crumenatum, &c. When such plants as Dendrobium Pierardie grow very fast, in an atmosphere which suits them, their stems will frequently branch, when the new branches take the pseudobulb form, or they may be jointed at such cases the original branches are equivalent to the rhi- zomas of the pseudo-bulbous species, and the secondary branches to the pseudo-bulbs themselves.

The leaves are very uncertain in their appearance: usu- ally they are sheathing at the base, and membranous; but in Vanillea they are hard, stalked, articulated with the stem, and have no trace of a sheath. Frequently they are leathery and veinless, as frequently they are membranous and strongly ribbed, and both these conditions occur in the same genus, as in the last and Tropidium. In a large number of the epiphytal species the leaves are notched un
equally at the apex, a singular structure which has not yet been noticed in those with membranous leaves.

Their floral envelopes are constructed irregularly upon a tertiary type, and consist of three exterior and three interior pieces. The exterior pieces are usually nearly equal, and less brightly coloured than the interior; but the two lateral ones are often of a somewhat different form from the other, which are usually divided into two or four other cavities, by the extensions of the endothecium between the lobes of the pollen masses or is occasionally more or less completely one-celled by the absorption of the connective. In Ophrysde it is erect, with a distinct connective, and with the bases of the rays or the column attached to the lower parts of the lip in a few instances, or sometimes this kind of anther originates from the margin of the clinandrium; sometimes from within the margin, in which case it is occasionally covered as a hood, as in Cryptarrhena and other genera.

The pollen consists of lenticular or spheroidal grains, either single or cohering in pairs, three, four, or in larger masses in indefinite number. The grains are usually held together by an elastic filamentous substance, which in Ophrysde and many others forms an axis round which the pollen masses are united, but in Lathraea, Cypripedium, Gongora, Disa, and some others, they are adnate to that organ; in no instance are they spurred or saccate. The lip is either distinct from the column or united to it, stalked at the base, or dilated there, and often extended into a bag or spur, which is sometimes, as in certain species of the genus Epipendrum, consolidated with the ovary: very rarely it has two spurs, as in Diphacanthus. In the instances of Cama
to and Aoracera it is saccate at the point. Its form is in fact divided into two extremes: the lip being in the former for simplicity, and Corysanthes or Stanhopea for complexity: these and all other complicated forms may, without difficulty, be reduced to a three-lobed type, the simple form of which is found in Maxillaria, Biola, and many Cattleyas.

1. Malaxiden (Ap 1), anther opercular; pollen waxy, with anther locules not glandular.
2. Vanda (Ap 3), anther opercular; pollen waxy, with the column folded back upon the pollen grains, and no gland.
4. Ophrysde (Ap 4), anther opercular; pollen sacculate or granular.
5. Eria (Ap 5), anther opercular; pollen granular or powdery.
7. Cypripedium, anther two, separated by a broad sepal tube.

The ovary adheres firmly to the tube of the calyx, and is usually also united to the petals, but when the flower is cut open to the base, with the floral envelopes belonging to it, it turns to the front. It consists of three perfect carpels, united at the base of the petals against the placenta in their axis, and of three other petals inserted transversely against the same, separating from them when the fruit is ripe.

The stigma is a viscid excavation in front of the ovary.
and just below it. In most cases it is quite simple, merely terminating in a glanular dilatation of the upper margin, called the rostellum. It is lined with a lach tissue composed of minute ascending jointed hairs, and has a direct communication with the cavity of the ovaries, either open or only imperfectly closed up. The glanular dilatation in all Vandæs and Ophrydeæ, and in many genera, separates from the stigma and adheres to the pollen masses, but it is in numerous other genera at all times inseparable from it. In Botanæa, in Habeneria, and in some other genera of Ophrydeæ, there are two arms to the upper edge of the stigma, each arm being channelled for the reception of the eucalidium of a rostellum and anther in a separable gland; the two these lies a membrane, very variable in size, sometimes merely a connecting web, sometimes a distinct plicate or lobe, and occasionally fornicate and extended in the middle into a mucro.

The fruit is usually a capsule of six valves, bursting when ripe, and discharging a multitude of minute seeds, with a netted loose tine. In Vanilla however and some other genera the fruit is succulent, and the seeds have a hard brittle integument immersed in aromatic pulp. The seeds apparently contain an embryo; but from the great minuteness of the parts this point is not yet satisfactorily determined.

Impregnation in Orchidaceæ was at one time thought to take place in a peculiar way, the pollen grains being fertilising principle of the pollen grains. It has now however been proved experimentally by Brown, A. Brongniart, Morren, and the writer of this article, that in reality takes place only by the application of pollen grains to the mucous surface of the stigma, as in many other plants.

Those who are desirous of further acquaintance with this singular order should consult Bauer's Illustrations, above quoted; R. Brown's Prodromus Floræ N. Hollandiae, 8vo., 1818; the same author's Observations upon the Impregnation of Orchideæ and Asclepiadaceœ, etc., London 1830-40, still in course of publication; and Endlicher's Genera Plantærum, p. 155, 4to., Vienna, 1856-40, still publishing.

ORCHIL, or ORCHELLA, also written archil, is the name of a dye as well as of the plant (one of the humble tribe of Lichens, or Rock-Moss) which yields it. The name is derived from the Orosello of the Italians or the Spanish Orchella. It is often corrupted in commerce into Rockella.

Several kinds are employed in commerce under the same name, the true Orosella having been treated of here, while the terms moss and rock-moss are applied to the crustaceous lichens belonging to the genus Lecanora, which include the Cudbear and Parelle of dyers. [PARELLA.] Tornefort is of opinion that this dye is given to other names in other that it was the Argy of Dioscorides; this of course it is difficult to prove, but it is remarkable that the Arabian authors give abyon (πομηρ) as the Greek synonym of a lichen which is in India used as a dye. Tornefort further thought that this was the substance used in dyeing the purple of Amorgos, one of the Cyclades, and says that when he was in the island, the lichen was still collected, and sold for ten crowns the hundredweight, to be sent to England.

The mode of preparing the dye was however lost, until rediscovred by a Florentine who realised a large fortune, and kept the process secret. The manufacture was retained for a century in Italy, and the weed was collected on the shores of the Mediterranean and those of its islands. It was however called tincture of turmole. The Dutch afterwards carried on the manufacture, and called it lacmus or litmus; but it has for some time been extensively carried on in England and Scotland, as is evident from 1813 cts. having been imported in 1829, though the quantities of good kinds have since diminished, from the difficulty of procuring them, as the price has continued to rise, and many parts of the world have been searched for species fit for the use of the dyer. That imported from the Camaries sells for 250l. to 350l. a ton; Cape Verde wood, as high as 300l.; the Azores or Western Island weed, 220l.; Madeira, 150l.; Afnic, 120l.; South America, 120l.; Cape of Good Hope, 20l.; while some has recently been brought from the East Indies, where both kinds are found, and one of them very abundantly.

This great difference of price is owing to different kinds being collected; some kinds, as the Canary weed, Roccella tinctoria, abound in colour; while others, as the R. fusciformis, contain it in much smaller proportion. These species resemble each other a good deal, and therefore the difficulty is great of collecting the good kind. Sir W. J. Hooker has given as the character of the genus Roccella,—

Thallus cortexic-cartilaginous, rounded or plane, branched or laciniated; apothecia orbicular, adnate or plane, on the thallus; the disc coloured, plano-convex, with a border at length thickened and elevated, formed of the thallus, and covering a subulentiform, black, compact, pulverulent powder, concealed within the substance of the thallus.

R. tinctoria (Dyers' Roccella, or Orchil); thallus suffrutescent, rounded, branched, somewhat erect, greyish-brown, bearing powdery warts; apothecia flat and horny, with a scarcely prominent border. A practical writer describes the good kind as having a nearly white powder on its surface towards the centre; the under surface is of a grey colour, and is not hairy; if wetted, it does not turn of an orange colour; its edges are flat and thin.

R. fusciformis (flat-leaved Orchil); thallus flat, branched, nearly upright, greyish-white, bearing powdery warts; apothecia horny, bordered.

Both kinds are found on maritime rocks, as well on the coast of England as those of the places already indicated, or on dry stone walls, exposed to the influence of the sea-breeze; the more arid the situation, the better is the quality of the lichens. The presence of the colouring matter is ascertained by steeping the weed broken up in small pieces in diluted solution of ammonia, in a bottle half filled with liquid, which is kept corked, but frequently opened in a temperature not exceeding 150° Fahr. Orchil forms a rich purple dye, which, though fugitive, is considered indispensible by the dyers, because it greatly improves the brilliancy of some of the colours, and gives the peculiar lustre and purple tint to some of the English broadcloths in consequence of their being first dyed with orchil. [ARCHEL] (Proceed. Com. Asiatic Soc., April, 1837; also Thomson's 'Chemistry of Organic Bodies—Vegetables,' where a full account is given of several chemical analyses of dye-yielding lichens, p. 399.)
ORC

ORCHOMENUS, called 'the Minyan,' and afterwards 'the Boiotian,' was a city on the western shore of the Lake Copais, in Boeotia. In the earliest period of Greek history it was known as a place of great power and wealth. (Homer, Iliad, ix. 351.) Its ancient magnificence is attested by the treasury of Minyas in it, which is described by Pausanias as being equal to any similar building which he had seen, and by the subterranean outlets of the Lake Copais, the remains of which exist to this day. [Boeotia, vol. v., p. 43.]

In the earliest times Orchomenus was the chief city of the Minyans, to whom the greater part of Boeotia, including Thebes itself, was subject. The history of this people is very obscure. Andreuæ, the first king of Orchomenus, is called the son of the river Peneus in Thessaly. In Thessaly moreover we find Minyas, with a city Orchomenus. Minyas is also made a descendant of Æolus. Mr. Thirlwall says that the early legends about the Minyæ may be considered as indications of a native race, apparently Pelasgians, overpowered by Æolian invaders; and the same fact seems still more clearly attested by the names of the two Orcohenian tribes, the Eteoclean and the Cepheian, the former of which, called after Eteocles, the son of Andraus, seems to have comprised the warlike chiefs; the latter, the industrious people which tilled the plains watered by the Cephissus. (History of Greece, vol. i., p. 93.) From the heroes of the Argonautic expedition being called Minyanæ, and from other women who are said to have come from the Minyanæ, was derived the title of honour equivalent to heroes or warriors, and was afterwards appropriated to the Æolians who established themselves at Iolus and on the adjacent coast. (Ibid., p. 91.) In the sixth year after the Trojan war, an expedition of Æolian Boiotæ, who had been expelled from Thessaly, drove out the Minyanæ from Orchomenus, which was then with its territory added to Boeotia. (Thucyd., i. 12; Strabo, ix., p. 401.)

At and shortly before the time of the Peloponnesian war, we find Orchomenus as one of the most powerful states of the Boeotian confederacy, and having under it the towns of Chironæa and Tegyra. Its government was oligarchical; the principal city being the town of Thebes, which was once called Echionæ. When Thebes was feeble, and Boeotia was subject to Athens (about B.C. 447), Orchomenus was a refuge for the oligarchical exiles of the neighbourhood. (Thucyd., i. 113.) After the peace of Antalcidas (B.C. 387), by which the Boeotian cities were freed from the supremacy of Thebes, Orchomenus was confederate with Sparta, and had in it a Laconian garrison. (Plutarch, Pelop., i6.) In the year 368 B.C., the Thebans, taking advantage of the absence of Epaminondas on an expedition, destroyed Orchomenus, slaying the men, and selling the women and children into slavery. It was rebuilt after the destruction of Thebes, and is mentioned by Dicemarchus about twenty years after the death of Alexander.

The most prevalent fire ordeals in Orchomenus was that of the three Graces (γαρνάνων): there was also a temple of Dionysus in the city, and shrines of the heroes Aristaon and Minyas, with which games (Μιναία) were connected. (See Pindar., Isthm., i., i.) and a tomb of Heracles, of which scenes were made. In the Orchomenian town of Tréby there was a temple and oracle of Apollo. (Stephan. Byz. Thýtyp.)


ORCHOMENUS, Arcadia. [ARCADIA.]

ORCIN, a peculiar matter obtained by Robiquet from the species of lichen (variolaria orina). He found that the juice of this substance is derived from the leaves of a plant which is white until it is acted upon by the sun and alkalies, when it becomes reddish violet. The process of preparing orcin consists in making an alcoholic solution of the lichen, and then treating it with water, which separates a character which the substance has a bitter and astringent substance; this, after several solutions and evaporation, is obtained in white crystals. These crystals are orange in colour, as already stated, of a reddish violet colour by the action of the air and alkalies.

The Saxon ordeals. A sunlight gives a liquid which is also the derivation given by Ducus. Lyes, Bosworth derive it from or, privative, "without," and dæg, "difference," an indeterminate word, and an adjective for the distinction of persons. The German words urtheil, a judgment, is apparently the same word, and also a compound. (See Selden, Notes to Eadmer, and Hickey's Diss. Epist., p. 149.)

The earliest traces of any custom resembling the ordeal is found in the book of Numbers (ch. vi.), in the water ordeal, which the Hebrew women suspected of adultery were compelled to drink as a test of their innocence.


The current form of the English water ordeals, from the trial and conviction of offenders established by the last English laws, were formerly more numerous than at present through the superstitious of our Saxon ancestors, when other northern nations, were extremely addicted to devices of this sort. The most common were water, fire, and of course a bird or animal, such as a duck. (De Mor. Germ., x.) They therefore invented a considerable number of methods of purgation, or trial, to preserve evidence from the danger of false witnesses; and in consequence of a notion that God would not forgive an innocent man guilty of a crime. (De Mor. Germ., x.) These are peculiar speculations of the Saxon race. The most ancient of them was the fire ordeal; which was peculiarly distinguished by the appellation of Judicium Dei, and sometimes referred to purgation, to distinguish it from the canonical purgation which was by the oath of the party. This was either fire-ordeal or water-ordeal, the former being continued to persons of higher rank, the latter to the common people. Both these might be performed by a deputy; but if the prisoner was to answer for the success of the trial, the deputy venturing some corporal pain for the public, or for the private ship. The fire ordeal was performed either by taking up the hand, unhurt, a piece of red-hot iron, of one, two, or three pounds weight; or else by walking, barefoot and blindfold, over nine red-hot ploughhares, laid lengthwise at several distances; and if the party escaped, or was not adjured innocent; but if it happened otherwise, as by confusion it usually did, he was then condemned as guilty. However, by this latter method Queen Emma, the niece of Edward the Confessor, is mentioned to have cleared the charge of witchcraft, and was in danger of being taken a witch by the monks of Winchester. (Rudborne, Hist. maj. Wiston, i., 4.)

Water-ordeal was performed either by plunging the head up to the elbow in boiling water, and escaping within an hour or two by casting the head into a receptacle of cold water, and if he floated therein without an action of swimming, it was deemed an evidence of his innocence. If the man was really guilty, but might turn to health, his
nourishment, if he was innocent. The coroner was then given to the suspected person, who received the holy sacrament at the same time: if indeed, as some have suspected, the coroner was not the sacramental bread itself. It is said that Godwin, earl of Kent, in the reign of King Edward the Confessor, refused the holy unction that he had caused the death of the king’s brother, appealed to his coroner, ‘per buccellam delugatiam et lumina’ (Ingliphus), which stuck in his throat and killed him.

The Ordeal of the King and Iron are first mentioned in the 7th century (Willel. Leg. Anglo-Sax., p. 27). See also the laws of Athelstan, Edward the Confessor, and the Conqueror. (Ibid., pp. 60, 198, 292.)

In the ‘Domesday Survey’ the readiness of claimants to put themselves to the trial by the first, second, third, and fourth ordeals, is witnessed in a great variety of instances, as among the lands belonging to the monastery of Ely, at a place then called Photestorpe, in Norfolk: ‘Hane terram calumpnitur esse liberam Vichetel homo Hennex quocunque modo judicetur, vel bello vel Jutatibus.’ (Domesd. tom. ii., fol. 213. See other instances, Ibid. fol. 110 b. 137, 162, 166, 172 b. 193, 208, 277, b. 332.) ‘Ferri candalentia Judicium’ (the ordeal of hot iron) is the only ordeal of the ‘Domesday Survey.’ The reason for this is given by Glanville (Tract. de Leg. et Const. Regni Angliæ, i. xiv. 322.) as the apprehension that litigiousness is bought by the judgment of God, namely, by hot iron, or by water, according to the difference of rank, that is, by hot iron if he should be a free man, and by water if he should be a villein, or rustic.

Eadmer (Hist. Novor., p. 48) speaks of no fewer than fifty persons of Saxon origin who, in the reign of William Rufus, being accused of killing the king’s stags, were at one time sentenced to the fire-ordeal.

The Trial by Ordeal was not discontinued in England by any positive law or ordinance, although Sir E. Coke (9 Rep., 32,) and after him Blackstone (4 Comm., 342,) have expressed an opinion that it was finally abolished by an act of parliament, or rather an order of the king in the ‘Provisiæ,’ in the time of Henry the Seventh. This order is to be found in Rymer’s ‘Fædera.’ vol. i. p. 228; Spelman’s ‘Glossary,’ sub voce Judicium Dei ; and in Selden’s ‘Notes to Eadmer.’ Spelman however thinks that this was merely a temporary law, without any general or permanent operation.

This opinion seems confirmed by a reference in the ‘Cal. Rot. Pat.’ p. 15, to another order in council in the 14 Henry III., ‘De justitia facienda loco igne et aqua.’ As however it is only mentioned as a former custom, and not as an existing instance, as by Bracton (lib. iii. cap. 16,) who wrote at the end of the reign of Henry III., or the commencement of that of Edward I., it is probable that, in consequence of the judgments of councils and the interposition of the Church, it was altogether abolished by the middle of the thirteenth century (Selden’s ‘Notes to Eadmer’); but this was long after it had disappeared from the judicial systems of most other European nations.

Blackstone, in the part of his ‘Commentaries’ already quoted, expresses his belief that the ‘Antigone’ of Sophocles (v. 270) a person, suspected by Creon of a murder, declares himself ready ‘to hold hot iron, and to walk over fire’ (1210). This order is to be found in the ‘Provisiæ’ of Henry the Seventh; but this was long after it had disappeared from the judicial systems of most other European nations.

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In Siam, besides the usual methods of fire and water ordeal, both parties are sometimes exposed to the fury of a tiger let loose for that purpose: and if the beast spares either, that person is accounted innocent; if neither, both are held guilty, and the slave is caused to be sent to the temple, and they proceed to a more certain criterion.” (Mod. Univ. Hist., vol. vii., p. 266.)

The ‘Aristic Researches’ (vol. 1., 4to. Calcutta, 1788, p. 389-404) contain a memoir on the trials by ordeal among the Hindus, by Ali Abulaham Laton, chief magistrate at the gates of Benares, communicated by Warren Hastings, Esq., nine in number: 1, by the balance; 2, by fire; 3, by water; 4, by two sorts of poison; 5, by Cossa, in which the accused drinks of water in which the images of the sun and other objects are thrown. In all the four cases, the accused is spitted on the hot oil; 8, by hot iron; 9, by Dharmach, in which an image named Dharmas, or the genius of justice, made of silver, and another of an antagonist genius Adharma, made of clay or iron, or those figures painted respectively on white and black cloth, are thrown into a large jar, from which the accused is instructed to draw at hazard.

The Latin forms of the different species of ordeal, as antiently used in England, are given by Spelman in his ‘Glossary,’ in v. from the Textus Roffensis.

The reader may consult for further information Grimm’s ‘Deutsch Rechts Alterthümer, Gottheit.’

ORDER is distinguished from degree in mathematical language by a purely conventional boundary. Both are terms of succession; thus an expression is of the first, second, third, &c. degree, according as its highest power is the first, second, third, &c., power of the principal letter. But if another succession should occur, e.g., in one of differential equations, then the number of such successive operations is the order of the process. Thus a differential equation which contains, at the highest, the fifth power of a differential coefficient, is said to be of the fifth degree; while if the highest differential coefficient which occurs in it is the third, it is said to be of the third order.

There is a particular use of the word order in regard to quantities which increase or diminish without limit. If A is a positive limit, but the expression does not exceed this limit in any way, we say that A is an inferior order to B; and generally the first powers of small quantities are said to be of the first order; products of two linear quantities, and second powers, of the second order; and so on.

ORDERS, HOLY. [Ordenation.]

ORDERS OF ARCHITECTURE. [Civil Architecture.]

ORDERS OF KNIGHTHOOD. [Knighthood.]

ORDINARY. This term, when used in English law, commonly signifies the bishop of the diocese, who is in general, and of common right, the ordinary judge in ecclesiastical causes arising within his jurisdiction. (Lind. Leg. lib. i. tit. 3.) The ordinary is also the comissary or official of the bishop, and to other persons having, by custom or peculiar privilege, judicial power annexed to their offices or dignities. Thus an archbishop is an ordinary. A bishop therefore is always an ordinary, but every one of the other orders of the Church. The term is derived from the Canonsists, and is in common use in several European countries. Since the Lateran council, when the apostolic see assumed the power of presenting to benefices, the pope has sometimes been called by canonical writers ‘ordinary’ (ordinarius), i.e. because he gives the probate of wills, the granting of letters of administration, the admission, institution, and induction of priests, and several other authorities of a judicial nature, are vested in him, and in an ordinary capacity. If the latter Roman law is a judge who has judicial cognizance in his own proper right, as such judge, of all causes arising within the territorial limits of his jurisdiction. He is opposed to the judex delegatus, or extraordinary, whose jurisdiction extends only to such causes as are specifically delegated to him by some superior authority. (Ayliffe’s ‘Parergon,’ p. 309; Justin, ‘Novell,’ 20, c. 3, and 112, c. 31.) With reference to this distinction, it became usual to apply the term ‘ordinary’ to bishops, who, when acting in their judicial character in ecclesiastical causes, have strictly an ordinary jurisdiction, and we find it used in this sense by Bracton and the earliest writers upon English law.

ORDINATE is that particular rectangular Co-ordinate of a curve which is measured along the axis of the axes and not upon an axis. [Co-ordinate.] It is necessary to observe that though the term co-ordinate has been extended to what are called polar co-ordinates, yet the word ordinate is not separately used in the latter system.

ORDINATION, ceremony by which holy orders are conferred, or by which a person is initiated into the ministry of religion, or set apart for preaching, administering the sacraments, and discharging other ecclesiastical rites and duties, public or private. In the Church of England, a candidate must be twenty-three years of age before he can be ordained deacon, and twenty-four before he can be ordained priest; must have an appointment to some cure, and be a fellow of some college; and must have finished his life and doctrine, for three years, from three beneficed clergymen; undergo an examination in Latin, Greek, and
theological learning; subscribe to the Thirty-nine Articles and the Liturgy; and, as bishops, they almost invariably required as an examination at one of the English universities, at Trinity College, Dublin, or at some other recognised school. No person can hold any vicarage, rectory, or benefice whatever, except he be in full orders.

For a time, and has always been observed in conferring the priesthood. This was the case under the Old Testament dispensation; in which the family, age, and qualifications of the individual appointed, are particularly described. In the New Testament, our Lord called the twelve apostles, and ordained them to perform the offices of religion. So likewise the apostles ordained others; and the form they adopted for setting them apart was prayer and the imposition of hands. In this manner bishops, priests, and deacons were appointed; and, for at least ten centuries, no other ceremony was used or acted thereon. When the church became corrupt, this, like almost every other ordinance, shared the general perversion. It lost its primitive simplicity, and was elevated to the dignity of a sacrament. The plan was adopted of delivering a person ordained priest, i.e. theplate and the cup; employing with the action certain words by which he was authorised to offer sacrifice to God, and to celebrate mass. To constitute a sacrament, three things are required, namely, an ordinance, the institution. Ordination was even instituted by Jesus Christ and his apostles; but in their institution of it, it clearly wants the main essentials of a sacrament. The church of the eleventh century, in converting it into a sacrament, considered the vessels as the matter, and the rubric as containing the form, and delivered it with the words:

‘Take thou authority to offer up sacrifices to God, and to celebrate masses, both for the living and the dead; in the name of the Father, the Son, and the Holy Ghost.’

Protestant churches have returned to the original method of conferring ordination, but use only prayer and the imposition of hands; some sects dispense with the latter, as the Wesleyan Methodists.

The great controversy between Episcopalians and Presbyterians is, the authority by which holy orders are conferred. This is the question that has been widely discussed. It is held that the church has the authority; and those especially who entertain the notion of Apostolic succession, i.e. assert the fact of an unbroken episcopal series from the days of the Apostles to the present time, to which the power of ordaining ministers is confined and through which it descends, deny the possibility of orders and even the existence of a church, where there is no bishop. The Presbyterians, on the contrary, contend that the presbytery, or a body of priests, have authority for this purpose. As the bishops and presbyters are in the same, and not distinct orders or officers. They urge that Timothy was ordained by the laying on of the hands of the presbytery; and that Paul and Barnabas were ordained by certain teachers and prophets in the church of Antioch. They deny any bishop ordaining in that capacity; it is certain however that bishops have existed as a distinct order from the very earliest times; and though we cannot assert that they are absolutely essential, yet they evidently contribute to complete the idea of a church, and tend to its orderly and efficient operation.

Many at the Reformation held the call of the people the only thing essential to the validity of the ministry, and taught that ordination is only a ceremony which renders the call more solemn and authentic. Accordingly the Protectors of Scotland, Edward VI., Queen Mary, and Elizabeth, have no episcopal ordination. For Luther, Calvin, Bucer, Melancthon, and all the first reformers and founders of these churches, who ordained ministers among themselves, are presbyters and no other. The following remarks on this subject will be interesting:

They are from Burnet’s ‘Exposition of the Thirty-nine Articles;’ himself an English bishop, and attached to the Episcopal form of church government. If a churchman finds in the minds of religious worship where they live to be so defiled that they cannot with a good conscience join in it, and if they do not know of any place to which they can conveniently go, where they may worship God purely, and in a regular way; if, I say, such a body, finding some that have been ordained, though to the lower functions, should submit itself entirely to their conduct; or finding none of those, should by a common consent desire some of their own number to minister to holy things, and should upon that beginning grow up to a regular constitution; though we are very sure that such a quite out of all rule, and could not be done without a great sin, unless the necessity were great and apparent; yet if the necessity is real and not figurable, this is not condemned or anulled by the article (the 23rd); for when this grows to a constitution, and when it was begun by the consent of the religious, it is not to be changed by such an extraordinary case, whatever some bolder persons have thought of this since that time, we yet are very sure that not only those who penned the Articles, but the body of this church for above half an age after, did, may, and ought to have consented to this change of constitution; although we are far from saying that it was essential, without all order and joint worship, or of joining in an unlawful and defiled worship, or, finally, of breaking through rules and methods in order to the being united in words; and government; of these three which one must have chosen, the last is the least evil, and has least heat. But if conveniences hanging upon it, and therefore it may be chosen.”

(Burnett On the Articles; Watson’s Thesaurus Dictionary.)

ORD, an ORD VESSEL, a general term applied to the great artillery (guns, carronades, howitzers, and mortars) which are used in war, on land or at sea; the name being probably derived from the compagnies d’ordonnance, or French Archers, instituted in 1448 by Charles VII. of France. These guns were generally light; but in 1429 Jamiel gave rise on the Continent to the first important improvements in the construction and use of heavy artillery. According to Templehof it was then that some efforts were made to establish a system of proportions between the length, the thickness, and the caliber of ordnance; the gunpowder was improved, and that certain relations between the charge of powder and the weight of the projectile began to be established. It was not however till the beginning of the seventeenth century that artillery, which had begun to be extensively employed in engagements between hostile armies; but in 1632 the Austrians and Swedes together are said to have brought into the field 2000 pieces among which were 24, 16, 12, and 6 pounders.

An artillery capable of operating on land and sea was the first systematically introduced in warfare by Frederic the Great; but the full development of the important services which are capable of being rendered by the gun, began in the Prussian general Schwerin, since whose time the horse-artillery, as it cannot be considered as an indispensable requisite in the army of every nation in Europe.

In the British service the management of the men and horses employed in the work of the ordnance is assigned to a particular troop; and though these horse-soldiers have never generally employed, they have occasionally rendered considerable service.

(Rockett.)

The materials of which ordnance is formed are wood and brass; the latter being a mixed metal composed of copper and tin, in the proportion of from 8 to 10 parts of the former to 100 parts of the latter. Iron guns are stronger than those made of brass, and consequently they are better able to resist the effects of the long continued firing which takes place in the artillery. Ordinary field guns, on the other hand, being lighter, are more conveniently trained with place to place with troops in the field, and they are enough to resist all the firing which can be required to be made from them in any general action. It is said that therefore the guns were carried into the line during the autumn, in Spain. 1, 364 rounds were fired in one day from brass ordnance, and from 300 to 350 rounds were fired constantly, in the same time, from iron 24-pounder guns.

Ordnance is now cast either in iron or in dry sand; as the latter material is said to permit the necessary surface of the gun to be more correctly formed, it renders it unnecessary to complete the figure of the piece by the process of turning. To make the mould for a gun, in sand, a model or pattern of the gun is executed, which is placed in the mould, and the fire or sand is poured in. After the mould is filled, it is broken up by fire, and the gun is cast, iron, and consists of portions corresponding to those of the model. Between the latter and the interior surface of
The gun-box the sand is then well rammed; and when the whole of the moulding is thus formed, the gun-box is taken to p. eces, the several parts of the mould are fitted together, and in this state dried at a stove. Lastly, the mould being placed in a vertical position, with the breech or thicker part downwards, and its interior surface having been painted in order to prevent adhesion to the metal in casting, the melted iron or brass is suffered to flow in through a pipe at the upper extremity of the mould, to the size of what is called the dead head (a mass of metal which, in casting, is formed beyond the muzzle extremity of the gun). In 12 hours after being cast, the mould may be removed, and the gun may be bored. [Cannon.] Guns, cannonades, howitzers, and mortars are cast all and bored in the same manner.

Iron guns are cast from pig-metal of different qualities,

A scale of quarter degrees is graduated on the base ring, the zero line being in a plane passing through the axis of the gun and cutting the exterior surface immediately above the trunnions, and the intersection of such plane with the side of the muzzle is marked by a notch on the latter. These quarter-sights, as they are called, serve to give the gun an elevation not exceeding three degrees, and this is accomplished by lowering the breech till the division expressing the intended elevation and the notch on the side of the muzzle are in a line with the object. The axis of the gun will then be inclined to a plane passing through the object and the axis of the trunnions, in an angle equal to that which is indicated by the division above mentioned.

A point-blank disposition of the gun is that in which the zero notch on the base ring and that on the side of the muzzle are made to coincide in direction with the object, whether this line of direction be or not parallel to the horizon. But when a notch on the top of the base ring and one at the top of the muzzle are made to coincide in direction with the object, the gun is said to have the line of metal elevation. [Gregory, p. 463, col. 1.] The angle which the axis of the gun, in this case, makes with a plane passing through the trunnions and the object is about 0° degree.

For elevations greater than three degrees a tangent scale is employed; this is a brass rod which slides up and down in a groove formed in the direction of a diameter to the base-ring of the gun, and is divided into quarter degrees. In using this scale the latter is drawn up till the graduation expressing the intended elevation is at the surface of the base ring; then the breech of the gun is lowered till a notch at the top of the scale and that at the top of the muzzle are in a line with the object. The axis of the gun (allowance being made for the difference between the semidiameters of the base ring and muzzle [Draweaz]) is then inclined to a plane passing through the trunnions and the object in an angle indicated by the said graduation.

The iron employed in gun-making is now so much refined and the processes of casting and boring so much improved, that it has been found practicable to consider considerably the quantity of metal in iron guns, and thus to facilitate greatly their transport from place to place; accordingly iron ordnance is at present cast with much lighter proportions than formerly. So much advantage also is now obtained from the more uniform density and the more perfect sphericity of shot, that it has even been found convenient to 

*Whereas* and *or rebore* the existing ordnance, so as to bring each nature of gun to the next higher calibre.
Thus the old iron 6-pounders have been converted into 9-pounders; 18-pounders into 24-pounders, and so on. The practice was first recommended by Colonel Paxahans, in France, and has lately been adopted in this country.

The application of locks to naval ordnance was introduced by Sir Charles Douglas (captain of the fleet to Admiral Rodney in the action of 1782), and their efficiency has since been fully recognised. At first the locks were made with one or two letters, and were, in consequence, inconvenient and liable to the loss of time attending the fixing a fresh flint was found to be so great, that instead of renewing the flint, course was generally then had to the lintstock or port-fire. But this defect has been removed by the construction of a lock with two flints, so spread, that on the failure of one, by simply turning the nut, the other may be brought into use. This improvement was made in 1818, by Major-Gen. Sir Howard Douglas; it was immediately introduced in the British navy, and has since been adopted in the land-service artillery.

From experiments made in France it has been ascertained that hollow shot, being with equal weight greater in diameter than such as are solid, when fired with low charges of powder against ships, produces most dangerous breaches in their sides; and, in consequence, certain heavy iron howitzer-guns for discharging such missiles have been introduced in the French navy. Similar experiments, attended by like results, were in 1829 made in this country by the late Lord Hardwicke with a short and massive 15-inch gun which he invented on the occasion. The hollow shot projected from this piece of ordnance weighed 120 pounds, and being impelled by 11 pounds of powder, producing an initial velocity of 1000 feet per second, it pierced, at the distance of 400 yards, a solid iron plate 1 1/2 inch thick, and passed through half an inch of steel, which was the present thickness of the armour of the enemy; opened a square hole, 4 feet in diameter. It is observed however that the effect of hollow shot cannot be depended upon at a distance of more than 400 yards if the weight of the shot is but half, or at more than 500 or 600 yards if the weight is but two-thirds, of that of a solid shot of equal diameter.

Experiments have also been made in France on the effect of loaded or live shells as they are called, when projected horizontally into ships, the fuses of the shells being regulated so that the latter may arrive, as soon as they have passed the side, and it is easy to conceive that the consequences must then be most destructive. The existence of loaded shells on board of ships has been objected to on account of the danger which might ensue from the accidental igniting of the fuses, but it is replied that this danger is avoided by keeping each shell in a separate box, or by covering the fuse with a metallic cap till the moment when it is required to be put in the gun.

Cannons for ordnance are of several kinds, according to the nature of the arm or the manner in which it is employed.

Field gun-carriages consist of two cheeks or side pieces of elm, firmly attached together by transoms and resting on the axle-tree of the wheels; the trail, or rear extremity of the side pieces, touching the ground when the gun, which lies over the axle-tree, is in a horizontal position, that is, in a state for action. Generally now however, instead of continuing the two side pieces to the rear extremity, one solid piece, that of oak is fixed to the carriages, fixed to two short side pieces, the other extremity resting on the ground in the case just mentioned, or being attached by a hook to the limber when the gun is travelling. The limber is a bed, with shafts, mounted on two wheels, and carrying two ammunition boxes for the service of the gun; here the carriages are harnessed to the limber, and gun with its carriage is drawn after the latter. An ammunition waggon also accompanies each piece of ordnance, and there are others as many in rear.

Field howitzer carriages and their limbers are similar to those just mentioned, but stronger, and the cheeks of the carriage are farther asunder.

Carriages of a light construction are employed for the artillery which is used on service in mountainous countries.

The travelling carriages for siege-ordnance are made wholly of oak, and the limber carries no ammunition; the great size and weight of the gun-carriage trail not permitting, when it rests on the limber, the boxes to be placed there. The trail of siege-howitzer carriages does not much the ground when removed from the limber, but rests and is made to run on two iron truck-wheels.

Carriages for garrison service and for the navy consist of two short cheeks or brackets, connected by transoms, and they move on four truck-wheels. Garrison carriages are made of cast-iron, which is more durable than wood, particularly in tropical climates. Heavy platforms of timber or cast-iron are also occasionally placed at the angles of forts; they are made to turn at one extremity upon a vertical pivot, the other extremity traversing along ways of slides or wheels. The universal carriage is mounted upon this platform, and thus the piece can be fired over the parapet in any direction at pleasure.

Mortars are placed upon solid beds of wood or iron, which are made with heavy as is considered necessary, supporting them from place to place, for the sake of obtaining steadiness when the piece is fired. The larger kinds of mortars and their beds are removed on platform carriages. Sea mortar-beds are made of strong timber; they have a hole in the middle for receiving the iron bed on which the bed turns round, and they are placed on strong wooden frames fixed in the vessels by which they are carried.

The number of horses employed in the British service's draw artillery of the different natures is as follows:

For a 6-pounder, 2 horses; for a 9-pounder, 3 horses; for a 12-pounder, 4 horses; for a 18-pounder, 5 horses; for a 24-pounder, 6 horses; for a 30-pounder, 7 horses; for a 68-pounder, 8 horses; for a light 6-pounder, a 9-pounder, a heavy 6-pounder, or a 12-pounder howitzer, from 6 to 8 horses. For a light 6-poun- der, a heavy 3-pounder, or a 12-pounder howitzer, from 6 to 8 horses. It may be observed here, that two horses cannot carry a 9-pounder or a 12-pounder without being considerably overburdened by one; therefore the number of horses which should be applied to draw weights must be increased in a higher ratio than the weights.

Formerly howitzer- and pounder guns were attached to each battalion of infantry, but this practice has long been discontinued, and now all the artillery which accompanies an army into the field is formed into batteries or brigades, each containing generally consisting of six pieces. The brigades of foot-artillery consist, in the majority of cases, of five 6-pounders and a 6-inch howitzer, or five 9-pounders and a 54-inch howitzer, and a troop of horse-artillery is usually accompanied by six light 6-pounders, besides a light 54-inch howitzer.

Six-pounder guns were not much employed with the armies under the four of Wellington, and they were supposed to be inferior in effect to the artillery which the French brought into action during the war; they may however be advantageously employed with a corps detached for the purpose of intercepting an enemy's convoy: but it may be observed, that in the event of such a corps being finally taken and destroyed this enemy may take good effect against troops at the distance of 1000 yards. Twelve-pounders and even 18-pounders are necessary in the field when it is required to depress parapets in small intrenchments, to break down bridges and the like.

The guns hitherto employed in the attack and defence of fortresses have been 12, 18, and 24 pounders: the last are used in the formation of breaches, and the others for the purpose of damping the enemy's artillery by direct or ricochet firing.

With respect to the quantity of ordnance which should accompany an army into the field, no precise rule can be given, as the ratio of the number of men to that of the pro- ductions of every piece of ordnance admitting of multiplication of the various; but, according to General Lepissine, a division of 12,000 men, including two regiments of cavalry, should be attended by three brigades of horse and three field artillery: one brigade of each kind is recommended to be advanced for a battery, another to act as general park of artillery, and the rest with the depots of the army.

The principle which should govern a commander in the choice of guns for naval actions is, according to Sir Howard Douglas, that with equal calibre they should be the greatest point-blank range; the practical maximum for them being to close to, or within that range, and then with speed and accuracy, Long guns are never used in general, to be inaccessible to carronades for nau-avy, both because their fire is more accurate, and when fired, the iron of the metal, the axis of de-
Ore. For the sake of obtaining a nearly horizontal direction when a ship is rolling, it is a common rule in action to fire when the vessel is nearly upright; but this is said to be subject to some limitation, for it may happen that then the ship is in the trough or hollow of the sea, in which case she will have less compass over her enemy than if she were on the summit of a wave: and it is recommended that shot intended to take effect on the hull of an enemy's ship should be discharged while the side engaged is descending towards the enemy's rigging; or shot intended to set fire to a sail should be fired with the rising motion of the side, provided the aim be taken low.

Details concerning the exercises of ordnance for landservice may be seen in Spearman's *British Gunner*, under the chapter "the guns there are". The exercises of ordnance have always been under the direction of Sir Howard Douglas's *Treatise on Naval Gunnery*, Part iii.

**ORDOVICES. [Britannia.**

**ORE. [Mining.**

**OREBRO. [Sweden.**

**OREGRUND. [Sweden.**

Ore, a government of Great Russia, is situated between 51° 50' and 55° N. lat. and 32° 50' and 39° 35'E. long. It is bounded on the north by Kaluga, on the north-east by Tula, on the south by Orel, and on the south-west by Kharkov, and on the north-west by Smolenssk. Its area is stated by Hassel, according to Reymann's Map, at 17,830 square miles; but other writers make it only 16,000 square miles.

**Face of the Country; Soil; Climate.** The country has a considerable elevation, but it contains no mountains. There are some chains of calcareous hills, and some eminences along the banks of the rivers. The soil generally consists of loam, mixed with manure, and having received several other rivers, runs into the government of Tschernigow. The second river is the Oka, which rises on the frontier of Kursk, and would be navigable at Ore if the stream were not obstructed by numerous mills. It receives several small rivers, by which it is much navigable. The third river is the Don, which, rising near the town of Dnieper, and others of that of the Wolga; but the greater part of the country belongs to the basin of the Dnieper, and slopes to the south. The principal river is the Desna, which comes from Smolensk, passes through the circles of Brünak and Trubutschewsk, where it is very navigable. It has, having received several other rivers, runs into the government of Tschernigow.

The Desna is navigable for flat-bottomed boats of the burden of 25,000 poods (900,000 lbs.), and when the water is lower, of 15,000 poods: no part of it is obstructed by rocks. The third principal river is the Sour, two of which is near that of the Oka; it runs to the north-east, receives on both sides smaller streams, and falls into the Don on the frontier of Woronets. There are no large lakes, but the province is extremely well watered by streams. It is of a very mellow and fertile soil, and the climate healthy. The general failure of the crops is extremely rare. The waters are frozen at the end of November, and thaw in the beginning of March.

**Natural Productions.** Ore is one of the most fertile provinces of the empire. For corn in general the ground is never manured; but when it is greatly exhausted, it is suffered to lie fallow. All kinds of corn are cultivated, a little flax, much hemp, and in some places tobacco. Horticulture is generally good; every landowner has his kitchen-garden and orchard, in which all the culinary vegetables common in Russia are cultivated; also abundance of hops, apples, and cherries, and in some parts pears and plums. There are woods and copes in all the circles. The commonest trees are birches, alders, firs, sycamore, and especially birches, especially quails, are very abundant. The breed of domestic quadrupeds is better and more abundant than in the northern provinces: the horses are a fine breed, fit both for draught and the saddle, and the oxen large and strong, and are used for draught. The sheep furnish good wool. Swine are very numerous. The inhabitants keep likewise great quantities of bees. The common domestic fowls and geese are generally kept. The mineral products are lime, millstones and grindstones, alabaster, saltpetre, and some bog-iron. No use is made of the peat which is found in the government.

Manufactures and Agriculture. The cultivation and the breeding of cattle are the chief occupations of the inhabitants. The occasional employments of the women are spinning, weaving, and knitting; of the men, felling timber, and other work in the forests, lime-burning, stone-hewing, and salt-making. The woods are not extensive in the villages, and few mechanies. The country-people make for themselves almost everything that they have need of. There are however some iron-works, mills, &c. In the province there are manufactories of canvas, table-linen, sail-cloth, table-linen, leather of various kinds, cordage, paper, colours, glass, earthenware, soap, &c. There are numerous brandy distilleries.

The chief articles of exportation are bar-iron, nails, steel, wire, window glass, brandy, bass mats, sacks, cordage, corn, flour, hemp, oil, some sir famaras, barks and planks, tobacco, horses, oxen, tallow, butter, honey, wax, and other productions of the country. Almost all articles of foreign produce and manufactures of which the inhabitants are in want are procured from abroad. Rather to the east of Orel are Orel, Siuwas or Sewsk, Jeletz, and Briausk.

With respect to the population, the same uncertainty exists as with regard to that of many other parts of Russia. It is stated, in 1821, that the population was 1,270,000; in 1830, it is stated at 1,220,000. Schnitler, in 1835, gives 1,300,000; yet he says that the official census for 1796 made it 935,000: and he shows, by the official account of several years between 1800 and 1830, that the average annual increase is above 30,000. We believe the increase to have been larger in the first than in the last half. The inhabitants are partly Great Russians, partly Little Russians and Cossacks; the great majority are of the Russian Greek church, and the head of the clergy is the bishop of Orel and Briausk. They have the character of being industrious and frugal, and are for the most part in easy circumstances; they however do not seek refinement, and dislike innovations.

Orel, the chief town of the government, is situated in 50° 40' 45" N. lat. 36° 10' E. long. on a strong island on the river Oka, where it is joined by the Ortik. The houses are in general of wood, and the interior of the town is gloomy. Up to the seventeenth century, Orel seems to have been an insignificant place; but it was then fortified, and a considerable town built, part of which is still standing. After the parting of the Poles, and in the time of the false Demetrius, it was frequently taken and retaken. Since that time it has rapidly increased; at the census in 1783 there were only 1,000 souls (i.e. males), but now the population is 15,000 or 16,000: in 1820, there were 20,000; and the official report of the civil governor in 1830 states the population at 31,000; it is probably (in 1840) nearly 40,000. This increase may be easily accounted for. Orel is well situated for trade; it is the entrepôt for the corn of Little Russia, and the place from which Moscow draws its chief supply. Corn and hemp are sent to St. Petersburg to be exported. Other articles are wine, procured from the southern provinces, tallow, butter, honey, wax, wool from Little Russia, long-wood, and leather. There are manufactories of linen, cordage, and soap. The annual fairs are very well attended. Besides the buildings belonging to the crown, there are 20 churches, two of which are the convents, and a bazaar. The town, which is a bishop's see and the seat of government, has a gymnasium, a district school, and a seminary for the education of priests for the Greek church. In the vicinity there are many extensive gardens.

The other principal town of the government are Siuwas or Sewsk, with 4000 inhabitants, the see of a bishop, with a seminary for 400 pupils; there are manufactories of earthenware, colours, &c.; Briausk on the Desna, with 3000 inhabitants, has a seminary, a copper foundery, tanneries, and much trade with Kalisz, Karatschef, with 6000 inhabitants; Trubutschewsk, on the Desna, an ancient town, with 3500 inhabitants; Dmitrowsk has 3000 inhabitants;
Kromy, 1000 inhabitants; Maloi-Angarskoi, 1500 inhabitants; Livny, on the Soana, 6000 inhabitants; Jelitz, on the Soana, with 8000 inhabitants, has a great trade in iron wares and corn; Mazank at the junction of the Meana and the naval river Sudakha, has 6000 inhabitants; Bolchow, on the Nugra, is a well-built town, with 14,000 inhabitants. These 12 towns, including Orel, are the capitals of the 12 circles of the same names.

[Source: D. Hahn, 1830; Hirschelmann, 1833; Schuber, 1835; Schiefer, 1835.]

ORELLANA. [Amazon.]

ORELLANA, FRANCISCO, the first European who traversed the continent of South America, was born at Truxillo, in Valencia, in the twelfth century. He was of a good family, and, like many of the same class, went to the New World to seek the wealth which he wanted at home. He accompanied the successful expedition of Francisco Pizarro to Peru in 1531. A casque having reported that a country existed beyond the mountains east of Quito, abounding in gold and silver, cinnamon and other aromatic productions, the love of enterprise and the greediness of the Spaniards were excited. Gonzalez Pizarro, brother to Francisco, undertook to penetrate to these regions and showed lying between the city and this desirable country.

Orellana attached himself to Gonzalez, and they set forward on their expedition in 1540. The natural impediments they met with were high hills and torrents of rain which they experienced, by cutting off their communications, reduced them to the greatest extremities. At length they reached the province of Zumaco, where they found the cinnamon- trees growing wild. From Zumaco, Orellana explored the country to the east, and followed the course of a river, supposed to be that branch of the Maranon called the Napo, for 200 leagues, when the supply of roots and berries on which they had been living became so scanty, that on the 20th of September they were forced to eat the skins of their saddles. After great sufferings and many difficulties, he reached the sea in August, 1541, having navigated this vast river above one thousand leagues. On his return to Spain he spread such wonderful reports of the 'El Dorado' that he had passed through, of the temples ruins, and of the abundance of gold and silver, that the king of Spain granting him extensive possessions, he returned to the river Amazon in 1549, but shortly after fell a victim to one of the diseases prevalent in the low and swampy situations of the tropics. We know nothing of the details of the countries through which Orellana passed, nor was it until lately that any persons were willing to undertake so difficult and dangerous a journey. Lieutenant McGill, R.N., performed it in 1826, and Lieutenant Smyth, R.N.

ORENBURG, the most westerly government of Asiatic Russia, is situated between 47° and 56° N. lat. and 50° 20' and 64° 20' E. long. It is bounded on the north by the government of Perm, on the north-west by Wyoka; on the west by Casan, Simbirsk, Saratoff, and Astrachan; on the east and south by the steppe of the independent Kirghises, and on the north-eastern extremity by Tomsk and Tobolsk. Its area, according to Schubert (with whom Arasjief and other geographers are more nearly correct), is 4,250,000 square miles: Hirschelmann however makes it 1,34,000 square miles. It is divided into twelve circles.

Face of the Country; Soil; Climate.—Towards the south, in the country of the Cossacks of the Ural, the government is a steppe, which is destitute of trees, and only produces the plants peculiar to saline countries. Beyond the mountains it is a plain intersected by morasses and a great number of lakes; on this side of the mountains the surface is undulating, remarkably varied, and often very picturesque. To the north, where the Ural chain enters the government, is called the Beskadia, Orenburg, the part which runs due south, parallel with the river Ural, which it crosses by making a sudden bend from east to west, is called the Orenburg mountains, branches of which, stretching from east to west, extend into the government of Astrachan, and form the Nefli and the Obuchov. The surface of the Obuchov is granite; the upper rocks are calcareous and quartz, sometimes bare, and covered with erratic blocks, and sometimes covered with a sufficient depth of sand and earth for the trees to take root. Immense caverns open into the interior of the mountain, and are said to be as deep as 400 miles. The principal river is the Ural, which rises in the Ural mountains in the district of Troitsk, and forming as part of its course the western boundary between Orenburg and Irkutsk discharges itself by several mouths into the Caspian in 42° N. lat. Its entire course, which is regular, winding, but without falls, is above 1600 miles; its breadth, which is only 60 feet at Orskais, and 130 at Orenburg, increases to 480 feet, but the water is so shallow that it is grazed by oxen, barley, oats, beans, hemp, and millet. The inhabitants grow but little flax, barley, oats, and other vegetables. The forests are of immense extent, but there is an enormous consumption of wood in the forges, for making charcoal, for the preparation of tar and potash, and for building houses. The government is destitute of coal, and the lakes abound in water-fowl. The golden eagle of the Ural may be tamed and trained for the chase. The chief wealth of the government consists in its horses and cattle. The former, which are of Tartar or Bashkirian breed, are of the best quality in the government of Astrachan, and have heroes of 200, 1000, and even 2000 horses; the Russians, the Cossacks, and the Tartars, of 50 or 100. All have great numbers of oxen, goats, and more especially of sheep, of which a nomade will have from 300 to 4000, and the stationary inhabitants 400 or 500. The Cossacks have hundreds of swine, and the nomades camels and domestic animals. The fishery in the Belaja and the Kama suffices for the consumption of the inhabitants; and that in the Ural is of considerable advantage to the Cossacks. The government possesses large mines of coal, iron, and other metals; it produces gold, iron, copper, and lead in abundant quantity; and possesses a great number of various mines: it produces gold in great abundance (Ural Mountains), copper, iron, and a great quantity of salt, which is procured from the mines of Bischek, where the lake is 20 feet under the sand in beds covered with gypsum; the Cossacks obtain salt from the lakes. The other mineral products are sulphur, vitriol, marble, alabaster, agate, &c.

The Population of Orenburg, now estimated at 1,754,500, is extremely mixed; it consists of Russians and Little Russians, besides some Finns, Cossacks, Turks, Cherkess, Teptjiers, Metscheriaiks and Calmucks, Tchouvachs, Tchermises, Mordovia, Kizailbaichs, and Armenian. The great majority of Russians; next to them are the Turks and the Cherkess (about 13,000 families). Almost the whole of these ignorant, rude, and warlike people have habit a district at the foot of the Ural chain, which is called
after them, Baschkirs. They live by the breeding of cattle and bees, by the chase, and agriculture. They dwell in the summer under tents made of felt, and in winter in villages.

Manufactures and Commerce.—There are few manufacturing establishments in comparison with the extent of the country, the inhabitants in general providing for their own wants. The women are extremely skilful in weaving and dyeing. The working of the mines employs a great number of hands. But manufacturing industry has made great progress in Europe, and the ports have been extended to the line of the Caspian by the direction of the government. There were, in 1838, 187 different establishments, which employed above 4000 workmen, not including those in the smelting-houses and founderies of the Ural mountains, or those engaged in tanned leather. These establishments dressed 30,000 skins a-year; six million and a half pounds of potashes were made in 70 establishments; there were 10 very grand distilleries, one brewery, 7 manufactories of woollen cloth for the army, 43 tallow-melting houses, 2 cabinet manufactories, and 1 glass-house.

There are some remarkable facts connected with the commerce of this government. It is carried on partly with the remnant tribes in the government itself, who exchange their horses, cattle, furs, carpets, and blankets of felt or wool, for English, Dutch, Russian, and French goods. The articles, and partly with the Kirghises and people of Bokhara, whose caravans come to Orenburg or Troitsk, the two chief commercial towns, where there are custom-houses.

The same caravans bring goods are Bokhara, Khiva, Bokhara, Taschkend, and the Kirghis steppes. The articles exported to the interior of Russia in Europe are chiefly the mineral products, many of which are sent to the ports on the Baltic. These caravans coming from Bokhara bring fine raw and manufactured silk and cotton, and also Cashmire and Persian shawls, indigo, Chinese goods, tea, &c. The fair of Orenburg has lost much of its importance since the merchants from Bokhara have been permitted to frequent the towns and villages of this country. The shops and stores were once the principal place through which the caravans pass on their way to Europe; the Russian merchants residing there have however always opportunities to purchase goods from Bokhara, both for this government and that of Casan, while the merchants on their own account can only purchase by caravans in the amount of 3,557,922 rubles. In 1838, eight caravans arrived, one of which consisted of 334 and another of 3266 camels. Twelve caravans were sent from Orenburg.

The public inspector for Orenburg depends on the university of Casan, but education is very limited; according to the latest accounts that we have seen (1833), there were seven schools, with 30 teachers and 625 scholars, all males. The Mohammedans study at the high school of Gargil; a school was opened in 1833 at Te-Telilas, at the foot of the Ural mountains, in the midst of the Bashkirs. The Russian clergy also had seven schools, with 21 masters and 564 scholars. The Tartars have schools attached to most of their mosques. There are two printing-offices, supported by the crown. Most of the inhabitants are Russian, many Little Russians and Cossacks, and almost all the proles, Tschermisiss, Tschernochov, Mordwins, &c. are of the Russian Greek religion. Most of the Little Russians and Cossacks are Roman Catholics. Of the Mohammedans, the Little Russians have their churches. The Mohammedans, whose Mufti, assisted by a council, resides at Ufa, have 1714 mosques, of which 1094 are of the first class, with 2219 Imans, Mollahs, and other attendants. All the Tartars, the Cossacks, Casimucks, Tschermisiss, and Bokharats, of this religion.

The civil government is organised like those in Great Russia, but does not extend to the Kirghises and Cossacks, who are under a military governor, whose chief business is to provide for the security of that immense and almost unbounded district which is defended towards the Kirghis by a line of fortresses, and by the Cossacks, the Metschernicks, the Baschkirs, and the Calmucks, who in consideration of this service are exempt from all taxes to the government. The forts on the line of the Orenburg extend from Isleska to Krepish to Guriess, and in the north, at the distance of three miles from each other. From Isleska to Krepish southwards to Guriess is the line of the Cossacks of the Ural, defended in like manner by a long series of small forts.

Orenburg, formerly the capital of the government, is situated in 51° 46' N. lat. and 92° 31' E. long., in a vast plain at the confines of the Sakmar and the Ural; it is of an oval form, pretty regularly built, and well fortified. The population is stated to amount to 20,000. There are nine Greek churches, one Lutheran church and school, a military academy for eighty pupils, a great Russian hospital with 180 shops in the town, and an Asiatic bazaar with 492 shops in the Kirghis territory, a league from the town, which is the depot for the merchandise of Central Asia and of Russia. The Kirghises bring annually between 300,000 and 400,000 horses, skins, caravans of rich colours; the Bokharians bring gold in grains, Persian gold and silver coin, lapins lopini, stones, lamb-skins of a shining black colour which are worth a ducat in Bokhara, and at Orenburg sixteen shillings English a piece. There are at Orenburg 1000 exiles, whom there is a very well arranged workhouse. The military governor resides here.

Ufa, the present capital, a fortified town at the conflux of the Ufa and the Belia, has 6000 inhabitants, half of whom are Tartars. The public institutions and buildings are a gymnium, a school for a house, a lunatic asylum, seven churches, and two convents. It is the see of the bishop of Orenburg, and the residence of the Mohammedan Tarat Mufti.

Schnitler, LA FRANCE, LA Pologne, et la Finlande; Stein's Handbuch, edited by Hirschclam; Evermann, Reisen von Orenburg nach Bucharas; Ermann, Reisen nach Nord-Auen, 8vo, 1833; Reise nach dem Ural, &c., von A. von Humboldt, G. Ehrenberg, and G. Rose—vol. i. by G. Rose; [Russian (Gogolev.) Journal.]

OREC'INCLA. Mr. Gould's name for a genus of birds inhabiting the Himalaya Mountains and New Zealand. The species from the latter locality (Orecicncla macro-rhyncha) is nearly allied to, but differs from, Turdus varius of the museum. (Zool. Proc., 1837.)

ORFA. [Mesopotamia.]

ORFORD. [Suffolk.]

ORFORD, EARL OF. [Walpole, Horace.]

ORGANIC REMAINS. By this term geologists understand the numerous remains of vegetables and animals which occur among the strati fied rocks. The same objects receive also the name of organized fossils, and, with less precision, the titles of petrifications and fossils. Some of these objects are obviously parts of animals and plants, and are here, more or less altered by chemical agencies since their sequestration in the earth; others are earthly, stony, or metallic bodies, moulded within or upon parts of animals or plants, and thus resembling those parts in external aspect, but having none of their internal organic properties. Further, these objects must not be confounded with the 'remains of organic beings' the few cases where marks of vital action and movement occur on the surface and in the interior of rocks, such as the foot-prints of quadrupeds on the sandstones of Cheshire and Dumfriesshire, the holes made by lithophagus conchifers in the limestone of Morep, and the perforations of the valves of conchifers by zoophorous mollusks.

A philosophical view of the bearings of this great branch of modern geological science requires the consideration of the following questions:—

1. What are the tribes of animals and plants which occur imbedded in aqueous deposits of great antiquity, or (as rather improperly termed) in a 'fossil' state?

2. In what condition are they found? and how is this state of preservation produced?

3. In what manner are they distributed in the earth?

§ 1. Tribes of Fossil Animals and Plants.

Judging from published catalogues and the course of discovery, the living creation may be estimated to contain 100,000 plants, and far more than double that number of animals. In a fossil state we may say, in round numbers, that 1000 plants and 10,000 animals have been accurately described. The number of the last named is proportionately very according to the groups of plants and animals selected for comparison.

In 1828, M. Adolphe Brongniart, after examining the richest collections then known of fossil plants, gave the following interesting comparative table of fossil and recent species—
part of this article that it would be more correct to speak of organic remains as belonging to several successive conditions of the world, all preceding and preparatory to its actual state.


The imperfection of innumerable specimens of fossil plants, shells, fishes, &c., is not entirely nor primarily owing to the chemical and mechanical agencies which have been exercised to modify their aspect and substance; on the contrary, if the broken condition of many fossil trees, and the scattered situations in which their stems, leaves, and fruits occur, and in some cases the loss of part of their structure, are to be ascribed to the turbulent action which accompanied their inhabitation, and to the exposure and decomposition which have attended their preservation, it must be acknowledged that shells it is very common to find the pieces separated by the decay of the hinge ligaments; not unfrequently the shells are broken; sometimes they are rolled and worn. These accidents preceded their inclusion in the rocks, and they are indications not to be mistaken of the condition of the waters in which the molluscs lived, and the rate and circumstances of the deposition of sediment.

In whatever condition buried, the remains of plants and animals have been subsequently affected both by mechanical and chemical forces: the former are in the compressed ammonites of Watchet, Tytherton, and Speeton, in the gnatiostoms and pectens of Bradford in Yorkshire, and in the fishes and ichthyosaurs of Charmouth. Some of the most interesting cases of complete preservation are commonly witnessed among the shales and gritstones which cover coal; for the large cylindrical stems of stigmatis and lepidodendron lie flat as paper between the lammas of shale, but appear with a depressed elliptical section when they are sectioned transversely across the cylinder. It is an error to apply to all 'organic remains' the term of petrifactions; a large proportion have undergone some chemical changes, and many have really been imperfectly fossilized. More often, when the remains are found in the compressed ammonites of Watchet, Tytherton, and Speeton, they are affected, in the gnatiostoms and pectens of Bradford in Yorkshire, and in the fishes and ichthyosaurs of Charmouth. Some of the most interesting cases of complete preservation are commonly witnessed among the shales and gritstones which cover coal; for the large cylindrical stems of stigmatis and lepidodendron lie flat as paper between the lammas of shale, but appear with a depressed elliptical section when they are sectioned transversely across the cylinder. It is an error to apply to all 'organic remains' the term of petrifactions; a large proportion have undergone some chemical changes, and many have really been imperfectly fossilized.

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retain the impression of the external surface of the coral or shell; and it not infrequently happens that in the cavity once occupied by a shell is an almost unattached mass of stone, which filled the interior of the shell, and represents the figure of the animal, in several respects, perfectly.

6. Into this cavity carbonate of lime has been again introduced in solution, so as to become clearly crystallized in solitary rhomboids, or in a connected mass, replacing completely the gelatinous and carbonate of lime which composed the origin of shell; in other cases siliceous, and, rarely, iron pyrites, fill up the cavity.

4. The green-sand formations show abundance of examples of the impregnation of the calcareous substance of shells, corals, and echinodermata, with a siliceous infiltration. Numerous fossils, both in the substance of plants and the hard parts of animals, are found partly dependent on the original nature of the bodies and partly on that of the rocks in which they occur. In almost all sorts of rocks, belemnites and ostracodes retain their fibrous or lamellar structure; in the calcisiliceous impregnations abounded, and in the green-sands most of the shells, spongiadium, &c. are siliceous.

§ 3. Distribution of Organic Remains in the Earth.

The occurrence of organic remains is not known to be dependent upon the form of the land surface, but distinctly on the vertical height above it. Fossil plants occur in our deepest collieries, and fossil shells crown very lofty points of the Alps and Pyrenees. Yet, because of the limited thickness of the strata, and the entire absence of organic relics from the granite masses beneath, it would seem impossible that any strata should be preserved the most thousand yards below the surface, in most situations, the traces of ancient life end. In like manner, because in general the *lower strata*, in which few if any organic forms reach to the highest levels in the ground, most horizontal changes are almost or absolutely deficient in fossils. Upon the whole these are most numerous in the lower parts of the earth's surface, because the formations there occurring are generally of a later origin than the stratified rocks which overlie them.

In modern oceans the occurrence of marine mollusca, zoophyta, &c., in a living state, is either known or inferred to be limited to moderate depths, from 10 to 100 or 1000 feet; when therefore we reflect on the vast abundance of shells, corals, and other marine fossils, which have been found at a few thousand yards below the surface, in most situations, the traces of ancient life end. In like manner, because in general the *lower strata*, in which few if any organic forms reach to the highest levels in the ground, most horizontal changes are almost or absolutely deficient in fossils. Upon the whole these are most numerous in the lower parts of the earth's surface, because the formations there occurring are generally of a later origin than the stratified rocks which overlie them.

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It is thought by some writers that true dicotyledonous plants occur in the carboniferous strata. It is perhaps uncertain whether the fossil plants of the slaty strata of the Carboniferous and Permian are rightly referred by Brongniart to the Palaeozoic period.

The reader will not fail to remark that the classes belonging to the columns marked 2 below, are represented in all the fossiliferous strata, and that they are included in the hard carboniferous parts, more abundantly than any other of the classes. They are also principally marine, some of them exclusively so. These facts should make us scrupulous in believing that the full system of ancient organic life is disclosed to us by the series of organic fossils preserved in the earth.
Distribution of the Classes of Invertebran Animals.

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Distribution of the Classes of Vertebran Animals.

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Fishs are the only class of vertebrata found in all the systems of strata. Reptiles begin to appear (if not in the carboniferous system) certainly in the next above. Birds and mammalia appear locally and rarely in the oolitic rocks, and we believe the amphibia (fresh-water tribes of Batrachia) are not known in strata older than the tertiary. If, lastly, we inquire in what part of the series of aqueous deposits the remains of Man have been found, the answer furnished by modern observation is very different from the fanciful conjectures common in the seventeenth century. Then the remains of man "evidences of the deluge" (as Scheuchzer calls his imaginary fossil man, but real fossil salamander!), were supposed to be common in rocks of every age; now we are not able to quote a single authentic example of any such occurrence except in loose surface soil, sand, gravel, and caverns, in which it is uncommonly, pottery, fabricated bones, and other marks of rude civilization accompany the relics of our progenitors. If this absence of the bones of men from the marine strata were the only evidence which geology had to offer concerning the comparatively late creation of man, we might excuse the singular error which from time to time is revived by spectators little acquainted with the progress of science, the error of attributing to the human race, for whom the present aspect and arrangement of the globe is adapted, the same antiquity of origin as to those numerous tribes of plants and animals which became extinct before the birth of man, and were adapted to other and earlier conditions of the planet.

We may produce a few of the proofs necessary to the establishment of this truth, by determining first, what are the degrees of analog to existing races presented by the organic fossils of the different systems of strata. As before observed, the remains of terrestrial plants and animals occur too rarely, and in a certain sense too accidentally, in the strata of marine origin to be of much importance in this reasoning. Taking then our examples chiefly from marine tribus, we may state that in the Palaeozoic strata none of the species are known to be now living, and about two-thirds of them belong to genera which are also extinct. Among these extinct genera are the whole group of Trilobites, the Cymatium, Goniatites, Orthoceras, Phragmoceras, &c., Producta, and many lamelliferous corals. All the species in the carboniferous system are in the same manner extinct, and fully half of the marine tribes belong to extinct genera, often identical with those in the Palaeozoic series. Here we find some hundreds of terrestrial plants (Lepidodendron, Sigmaria, &c.), now entirely unknown among the 50,000 which botanists are acquainted with. Nearly the same proportion of the species found in the calcareous and oolitic systems (about 20 per cent.) belong to extinct genera (all the species being unknown in modern oceans). Among these genera we have the gigantic reptile forms, the Enoiomastur, the Iguanodon, the Meglosaurus; the countless Cephalopods, Amphimutates, and Brachiopods, many Crinoids, and besides plants approaching to Zamia, Equisetum, and tropical ferns.

The cretaceous system in like manner contains many extinct genera (Mosasaurus, Turritiles, Scaphites, Anomalures, Maraspiades, &c.), in which about 40 per cent. of the species have been ranked. All the species are distinct from existing tribes.

But in the tertiary strata, which crown the series of marine deposits, a different result has rewarded the diligence of those who have compared the fossil and recent species. The great number of shells in these deposits gives excellent means of judgment, and M. Deshayes has in consequence been able to establish very exact inferences. In the oldest of the tertiary ("Eocene deposits" of Lyell) there occur from three to five per cent. of extinct species. In the middle strata ("Meocene deposits") from 7 to 28 (averaging 15 per cent.) and in the uppermost series of teriaries ("Pleistocene deposits") from 40 to 95 per cent. Thus by estimates, as exact as can be made, of the whole number of species of existing geology, as showing that the affinity between fossil and recent species of animals and plants is greatest in the most recent strata, least in the most antient, and in general in a proportionally truer antiquity of the strata. Not only man is absent from the tertiary deposits, but nearly all the actual creation is wanting there, and is replaced by the relics of other and earlier creations.

By considering and comparing the organic remains which fill the successive systems of strata, we find, that as few living forms appear among the lower terraces, few or none of the tertiary forms appear in the lower parts of the cretaceous system; this system is in the same manner distinct from the mass of the oligoceans, these from the red-oligocenes; the latter from the carboniferous rocks, and all from the Palaeozoic groups. (For proof of this see the following works, namely—Murchison's Silurian System; Phillips's Mountain-Limestone Districts of Yorkshire; Smellie's Identifications; Mantell's Geology of Sussex; Deshayes's Tertiary Fossils.)

Each of these systems of strata contains the remains of animals and plants which were in existence in the fresh waters, or on the land, at or previous to the time of the production of those strata; and, by combining the evidence derived from all, we arrive at a view, incomplete to be sure, yet not necessarily inaccurate, of the succession of organic life upon the globe.

It is perhaps a common opinion that the earliest forms of life, those which occur in the fossiliferous primary (or Palaeozoic) rocks, are of simpler organization than most of those which belong to later periods; and a conjectural view of the succession of organic life on the globe obscurely hints at a gradual perfectionment of the animal and vegetable organizations in proportion to the elapsed time. In face of this view, the first occurrence of fishes in the uppermost
of the Silurian strata, and the first occurrence of reptiles in the lower beds of the magnesian limestone formation, deserve consideration. But on the other hand, it is not to be conceded that the earliest fishes which do appear exhibit analogies to reptile structure, and betray no mark of inferior organization; the earliest remains of reptiles belong to high grades of that class.

Referring to the most ancient known British fossils, those few which lie in the strata of Snowdonia, we find them to consist of lamelliferous Polyplacophora and Brachiopoda, such as Lingula, Producta, and Spirifer—a small assortment, certainly, and thus perfectly in harmony with the view of the gradually increasing numerical amount of fossil forms already explained, but not such as to justify a statement of their inferiority of organization. In the next stage of organic life, the Silurian system, the fossil species amount to several hundreds (at least 600), and among them are many Polyplacophora, many Echinodermata, Brachiopoda, and other Conchifera, Gasteropoda, and Cephalopoda, with Crustacea and Fishes. It cannot be said that these organizations, compared with others of the same class now living, are, in any just sense, inferior or less complex; nor do we find reason to qualify this assertion while reviewing the similar and larger series of fossils from the carboniferous system, in which the lower species are not less abundant. It is needless to pursue this discussion through the superior stages of the strata, in which the introduction of Reptiles and the development of the several classes of animals continually augment the analogy to the existing system of nature. The general result of this whole discussion, if we had room to pursue it, would be to establish the fact of the successive introduction of all the classes and most of the great divisions of marine animals in the successive geological periods, not by the improvement or expansion of one original general type, but by addition of new organizations to meet new physical conditions of the globe.

This important result, which presents to us a series of great revolutions in organic life anterior to the desiccation of our present land (which is the bed, or rather exhibits many successively obliterated beds, of the ancient seas, with their extinct inhabitents), and adapted to the chain of physical phenomena which preceded and prepared the actual arrangements of nature, may be confirmed by a brief notice of the duration of certain extinct races. By this expression it is not meant to state or to insinuate definite periods of time, but the space occupied on a scale of successive geological events, by the whole traceable duration of particular races of animals. For this purpose we shall take two genera of Brachiopoda (Producta, Spirifera), four of Cephalopoda (Goniitesites, Orthoceras, Ammonites, Belemnites), three of Crustacea (Calymena, Asaphus, Glyphis), three of Fishes (Holothybus, Palamosicus, Tetragonolepis), and three of Reptiles (Ichthyosaurus, Pterodactylus, and Mosasaurus). The system presents its boundaries by horizontal lines, and the particular fossils ranged in vertical columns, the asterisks denote the occurrence and geological duration of the groups.

<table>
<thead>
<tr>
<th>Systems of Strata</th>
<th>Tertiary</th>
<th>Creataceous</th>
<th>Oolite</th>
<th>Sillaceous</th>
<th>Carboniferous</th>
<th>Palaeozoic</th>
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<tr>
<td>Boreolesmee.</td>
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<td>Calyxacea.</td>
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<td>Amphipoda.</td>
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<td>Cycloemone.</td>
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<td>Echinodermata.</td>
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<td>Amoebae.</td>
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<td>Polype.</td>
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Here then is a representation of very numerous facts known to geologists, which demonstrate that each group of extinct organisms, whether called a genus or a species, each species of such a genus, has a definite geographical range, appears at a particular point in the scale of geological events, and ceases at another point. From these facts, investigated and collected, it is as certain that organic life existed during the period which elapsed in the production of the stratified rocks, many combinations of animals and plants—in this sense many systems of organic life—came into being and passed away, not by violent catastrophes or universal revolutions, but by partial substitutions distinct from each other, and often coincident with or consequent on changes of the strata, and more or less referrible to previous remarkable changes in the physical condition of the globe.

From such a view, which we regard as fully established in truth, the identification of strata by organic remains (as geologists, following Dr. William Smith, the employment of zoological and botanical evidence to determine the geological age of formations or systems of strata) follows as a natural and simple consequence. But in employing this powerful instrument of research, geologists must not overlook ascertained facts which limit the extent and modify the vigour of the application:

1. The geographical area within which any one species of fossil has been found is seldom (except in the Palaeozoic strata) extends beyond a few degrees of latitude or longitude. (The same thing applies to living species.)
2. The geographical range of fossil genera and larger groups is much greater, but their geological range is also greater, and the evidence which furnish geological age is diminished in precision.
3. Difficulties hence arise of a very serious nature where strata really contemporaneous or nearly so, but widely separated (as in North America and Europe), are to be compared. Of 100 species of fossils found in the cretaceous rocks of America, only two or three are identical with European species in the same rock.
4. In all cases where distant deposits are to be classed in age by their organic contents, a prudent geologist will not decide that a genus or a species is absent from a place because it has not been found there; he will not be satisfied with a few fossils of one genus or group; he will not pronounce a positive opinion, unless several species of characteristic groups, and belonging to different organizations, are presented for examination. On such evidence, embodying the characteristic combinations of organic life for each geological period, a just and secure inference may rest, and thus employed, organic remains become a clue to many of the darkest points in the antient structure of the globe.

ORGAN, CONSTRUCTION OF. We have on record several kinds of organs—the Hydraulic, the Pneumatic, the Barrel, and the Finger or Church organ.

Of the hydraulic organ we know little beyond its having been operated on in some way by water: it probably resembled the clepsydra, or water-clock, which chimed at certain hours. The pneumatic organ, whether more or less antient than the hydraulic, was certainly the parent of the present finger organ; but it was so evidently rude in its construction, that it must always be considered as a distinct instrument of music. The barrel organ is a machine with little variety and no expression; it nevertheless contains many clever contrivances, and is daily receiving improvements. The present finger organ is the largest and noblest of all musical instruments; its pipes may be of brass, lead, and for delicacy and sweetness of tone it is unrivalled. A complete and full finger organ should have three sets of keys, and at least two octaves of pedals.

The first set of keys takes the second or second the great organ, and the third the choir. The compass, as well as the size of organs, must depend upon circumstances. The German scale or compass is c c to f in alt; the English descend to g below, and in some organs as low as c c c, which, for duet and solo performances, is certainly the best. A good swell is always important to an organ, and we should recommend c c to f in alt as the compass to be
preferred. The compass of the choir is generally the same as that of the great organ. These several parts, or organs, when brought together by stops, called **couplers**, give to the keys of the **great organ** the command of every pipe in the instrument, the power and majesty of which are without parallel in instrumental combinations.

**Figure 1** is a section of a large organ, showing the several situations of certain principal parts of the instrument, which are variously placed however by different organ-builders. **A** is the **swell**, which is usually made of deal, and the thicker the better, but it certainly should not be less than an inch and a half in thickness: it must be lined with paper or leather to deaden the tone when shut. The front is formed of **Louvre-boards**, all of which are made to move on centres; they must also be an inch and a half thick. The performer opens them by a pedal expressly employed for opening and shutting the swell. This kind of front is what is known by the name **Venetian**. **B** is the choir **sound-board**, or part in which the pipes of that part of the organ are placed; **C** is the great organ **sound-board**, which also contains its pipes; **D** is the **bellowes**; **E** is the **pedal sound-board**. **F** is one of the front pipes, to which the wind is conveyed by metal tubes called **conveyances**; **G G G** are three roller-boards, one for each organ; **H** is a **tracker**, used with **shutters** and **centres** to reach distant parts of the section; **I** is the **keys**; **K** is the **pedals**; **L** is the **seat**. The numerous things which are not indicated in this figure must be sought for in working drawings, as we cannot and do not pretend to give these matters a practical form.

**Figure 2** represents the present **bellowes**, known under the name of horizontal **bellowes**. **A** shows the **recessor**; **B**, the deep frame through which the wind is taken. **C**, the part moved in blowing, called the **feeder**; **D D** the **registrator**, by which the equal raising of the **recessor** is ensured: there are valves inside for receiving and returning the wind, all of which are differently constructed by different builders.

**Figure 3** is a perspective view of a **roller-board**: **AAA** is the board on which the rollers are fixed; **B B** shows **pull-downs**, explained below; **CC C** rollers centred at each end into small blocks, in which they move; there are also arms to each end, in front, connecting the rollers with the keys and the wind-chest; **D D**, the levers which are connected with the keys and the pull-downs, and are longer or shorter as may be required; they are also parallel or **fan-like**, to suit their position.

**Figure 4** contains a few examples of pipes. **A** is a metal open pipe; **F**, the sounding part; **G**, the part called the **language**, and **H**, the **foot**; **B** is the same pipe, show-
two or more unison-pipes of the same diameter affect the ear only as one pipe. There is something in this opinion, but how much we will not venture to determine.

Figure 5 is a section of a sound-board, showing some part of the mechanism. A is the rack-board, by which the pipes are held in upright position; B shows the ends of the slides; C, that part of the sound-board which contains the channels for conveying the wind to the pipes; D, the pallet or valve which is opened by the finger of the organist, through the key, the lever, the pull-down, and the roller (see figure 7); E is the spring which keeps the pallet in its place when not in use; F is the pull-down, having a small screw and a leather button at one end, and a piece of hard bellows at the other; the former is fixed to the lever, and the latter to the arm of the roller; G is merely one end of the roller-board.

Figure 6 represents a draw-stop, a trundle, and a lever, all of which are used by the organist in changing a stop or slide; A is the draw-stop; B is the trundle; C is the lever; D is the slide. The draw-stop is linked to the trundle at E, the trundle is linked to the lever at F, and the lever is fitted to the slide at G. The centres are all at H. In connection with the above, there are also pedals called composition pedals, three, four, and five to an organ.

Figure 7 represents certain small parts of the action. A is the wire by which the pallet is opened; B is the pull-down attached to it; C is the pallet-end of the roller, with its fixing to the board; D is an end view of a roller, with a pull-down and lever, all in their relative connection; E is the pull-down, and F is the lever, to which the key follows; G is a common form of a square or centre, by which the trackers are united. Trackers are pieces of pine wood, § of an inch wide, and from an § to a § thick; they are of different lengths, and may be used to any extent. The

This Table shows the relative lengths and diameters of the open diapason, the principal, and the fifteenth stops, as high as c above middle c.

Quiet, two, three, and Ae Dolce, etc., all take the sizes and lengths of their proper tones in the open diapason. Trumpet and Oboe stops, being what are called unison stops, also take their lengths from the open diapason. The clarion, an octave stop, is measured by the principal. The balls of all reed-pipes should be as large as their places in the organ will admit of.

Middle c in the dulciana is an inch and a quarter in diameter and about two feet two inches long. A large size stop-diapason is seldom pure and musical. An inch and eighth wide and an inch and three-eighths deep, with thirteen inches in length, is a good scale for a middle c stop-diapason pipe in wood. Scales may be taken of larger or smaller dimensions, if desired; in which case the larger must be shorter and the smaller must be longer. Where stops are repeated, two or three of the same name, it is thought better to have them of different diameters, from an opinion that