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LIMONIA, a genus of plants of the natural family of Aurantiaceae, so called from the original Indian names, Neemoo and Leemoo, of the Lemon. Several of those described under this genus by Dr. Roxburgh have been referred to 

LIMOSIN, or LIMOSIN, a province of France, now comprehended in the departments of Corrèze and Haute Vienne. It comprises an area of 36,000 square miles, watered by the Vienne, one of the great tributaries of the Loire, and by the Dordogne, and its tributaries the Isle and the Vézère, all belonging to the system of the Garonne. The province was divided into two parts by the Vézère. Haut or Upper Limousin was to the north-west of that river, and bas Limoges for its capital: Bas or Lower Limousin was to the south and east; its chief towns were Vichy and Tulle. Limoges was the capital of the whole province. Limousin was included in the dioceses of Limoges and Tulle, the boundaries of which were both suffragans of the Archbishop of Bourges.

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

The town, in France, capital of an arrondissement in the department of Aude, and on the bank of the river Aude. The streets are paved and lighted, and the houses are of tolerably good appearance. The marketplace is a regular square. There are two churches, four public fountains, and a public walk. The public edifice most deserving notice is the gate of La Trinite, an ancient erection, near the bridge over the Aude. The population in 1831 was 6247 for the town, or 6518 for the whole commune; in 1836 it was 7105 for the commune, showing an increase in five years of nearly 600, or almost 10 per cent. The local manufactures are of leather and woolen cloth; there are several oil-presses, and in the neighbourhood there are iron works. The surrounding country produces good wine. There are a bish school, an agricultural society, an hospital, and a small collection of paintings, beside several government offices for judicial or fiscal purposes. The town is about 12 miles south-west from Carcassonne.

The arrondissement comprehends 688 square miles, and had a population in 1831 of 72,707, in 1836 of 75,891: it is subdivided into four cantons and 150 communes.

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

LINACEAE, a small natural order of plants, related to Cistacées, from which it differs in having an ovary with many cells, containing one or two seeds each, several styles, and a style terminating in one or two sepals, from which the separate styles and peculiar fruit of Linaceeae abundantly separate that order. The definition of Linacées may be briefly expressed thus: polygamy, hypogynous, monadelphous exogens, with a broken-whorled calyx; a many-located, many-styled ovary, containing one or two pedunculous ovules in each cell, and a capsule splitting at the point into as many valves as there are cells. The fruit is remarkable for having each of its carpels divided into two cells by a spuriously dissepiment originating inside the back, so that in reality each cell is two-seeded, although in the presence of this spurious partition it seems to be one-seeded.

But although Linacées approach the two orders already named in the structure of the organs of fructification, the vegetation is essentially different, the leaves being alternate, free from all trace of a volatile secretion, and destitute of stipules, and the nodes of the stem not being capable of disarticulation. The whole order contains but two genera, Linum and Raddiia: the former comprehends many species, the most important of which is common flax, Linum usitatissimum, the woody tissue of whose stems is so valuable for its toughness and fineness, and whose seeds furnish linseed oil. [Flax, where the plant is called by mistake Linum perenne; Linseed Oil; Linum.]
linely to the works of Aristotle and Galen, and is said to have been the first Englishman who made himself master of those writers in the original Greek. He also translated several of Orosius into elegant Latin, and with Grocyn and William Latymer undertook a translation of Aristotle, which was never completed. On his return to England he was incorporated M.D. at Oxford, which degree he had taken at Padua, and gave temporary lectures in philosophy. He was galleries at Oxford and London, and by the reputation he reared the last of King Henry VII. called him to court, and entrusted him with the care both of the health and education of Prince Arthur.

In the reign of Henry VIII. Linacre stood at the head of his profession, and his attention was paid to its interests by founding two lectures on physic in the university of Oxford, and one in that of Cambridge. He may also be considered the founder of the College of Physicians in London. In 1517 he was made a fellow of Christ’s College, Cambridge, and in 1518 he was made a royal physician to King Henry VIII., consisting in a corporate body of regularly bred physicians in London, in whom was vested the sole right of examining and admitting persons to practise within the city and seven miles round it; and also of licensing knowledge men in a letter to that place. Dr. Knight informs us that as graduates of Oxford or Cambridge, who by virtue of their degrees were independent of the college, except within London and its precincts. The college had likewise authority given to it to examine prescriptions and drugs in April and October. The fellows of the college was not allowed to give new college, and at his death he bequested to its house in Knight Rider-street, in which the meetings of the members had been held. Before this time medicine had been practised without control by pretenders of all kinds, but chiefly by the practice of physicians and the sons of physicians. It was the first measure by which the well-educated physician was afforded the least advantage, beyond that which his own character would give him, over the most ignorant empiric. Highly as Linacre was esteemed by his profession, he became known in other capacities, and was appointed to manage it for that of divinity, or rather to combine the two pursuits. In 1509 we find him in possession of the rectory of Mersham, which he resigned in the latter part of the same year, and was installed into the prebend of Eton in the church of St. Mary the Virgin in Lambeth, and afterwards in 1518, he became possessed of a prebend in the cathedral of York, where he was also for a short time precentor. He had other preferments in the church, some of which he received from Archbishop Warham, as he gratefully acknowledged in his funeral sermon. In 1513, he was made a fellow of the college, and he continued and benefited on his profession by translating into Latin several of the best pieces of Galen.

These were, the treatises ‘De Sanitate tuaendi,’ fol., Par., 1517; ‘Methodus Medendi,’ fol., 1519; ‘De Temperamentis,’ 4to., Camb. 1521; ‘De Pulsum Uso,’ 4to., Lond. 1522; ‘De Naturalibus Facultatibus,’ 4to., Lond. 1523; ‘De Symptomatum Differentia liber unus. Ejusdem de Symptomatum Causis liber tres,’ 4to. Lond. 1524. In these versions Linacre’s style was excellent.

He was also the author of the ‘Tractatus’ of Scolasticus, ‘De Publilis Asterois,’ was printed in the ‘Astronomi Veteres’ of 1499. His translation of Paulus Alpinus, ‘De Celsi et Dibus deliberiis, eorumque signis, Fragmentum.’ 8vo., Bas. 1529. He also wrote a small book upon the Rudiments of Latin Grammar, in English form; the ‘Prima Adstructura de Grammatica Latina.’ Paris without date, and afterwards translated into Latin by Buchanan. But his most learned work was his treatise ‘De Emendata Structura Latina Sermonis libri,’ sex, printed at London immediately after his death in 1524, and frequently reprinted in later years in the sixteenth century.

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

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


LINCOLN.

LINCOLN COLLEGE, Oxford, was founded in 1427, by Richard Fleming, or Flemmyng, bishop of Lincoln, as a grammar school. It received a royal charter in the following year; and it was afterwards greatly augmented by Thomas Rotherham, bishop of Lincoln, who transferred to the college an annual gift of £100, given by the late archbishop of York, and lord high chancellor of England, who added five fellowships, and gave a body of statutes to the foundation, in which he limited the election of the fellows to the old diocese of Lincoln and York, with the exception of one to the diocese of Wells. This was in 1479. Lord Crews, bishop of Durham, and sometime rector of this college, in 1717 made an addition to the endowments of the rector and fellows, and in 1718 endowed twelve exhibits of £50 a-year each, and all the additional endowments received a further augmentation at a later time, by the will of Richard Hutchins, D.D., rector from 1755 to 1791.

The present foundation consists of a rector, twelve fellows, six scholars, twelve exhibitioners, and one bible clerk; and in 1555 it had 24 students and 10 scholars. At the end of December 31, 1837, was 132. The patronage consists of the rectories of Cublington and Twyford in Bucks, of Winterborne Abbots with Winterton Stapleton in Dorsetshire, of Holm and Leighs Magna in Essex, and of Waltham in Lincolnshire. The college was built in 1601, and by the architect Smith, and the windows are rich in painted glass procured by the architect from Italy in 1629. In 1818 the whole front of the college was repaired, and much improved in its appearance by the addition of battlements and the introduction of appropriate enrichments. The buildings of the college were Dr. Robert Sanderson, bishop of Lincoln, architect. Sir William Davenant the poet, Dr. George Hickes, Sir George Wheeler, Hervey, the author of the Meditations and the celebrated John Wesley. (Gutch’s ‘Churche’s Colleges and Halls of Oxford; and the Univ. Calendar for 1838.’)

LINCOLNSHIRE, an English county bounded on the north by the estuary of the Humber, which separates it from Yorkshire; on the north-west by the county of York; on the west by the county of Nottingham, from which it is partly separated by the Trent; on the south-west by the counties of Leicester and Rutland; on the south by Northamptonshire; on the south-east by the counties of Cambridgeshire and Huntingdonshire, from the last mentioned county being separated by the Cross Keys Wash; and on the east by the North Sea or German Ocean. Its form is irregular, having its greatest length from north to south, 75 or 76 miles, from the bank of the Humber near the town of Barton to the mouth of the Wash; its breadth at the Wash, and at its greatest breadth, 51 or 52 miles, from the junction of the three counties of York, Nottingham, and Lincoln, to the sea at Sallifield. The area is estimated at 2011 square miles; and the population, in 1831, was 317,463, giving 132 inhabitants to the square mile. Its size is the second English county, Yorkshire alone exceeding it; in population the fourteenth, being rather less populous than Essex, and rather more so than Hampshire; and in density of population inferior to all other counties except Northumberland, Cumberland, and Westmorland, and comprehended between 52° 39’ and 53° 43’ N. lat., and between 0° 22’ E. and 0° 57’ or 0° 59’ W. longitude.
the county town, is 121 miles north by west from London in a straight line, or 134 miles by the mail-road.

The eastern part of the Humber, as the river Henry, forms a tolerably regular curve convex to the sea, and is low and marshy, except about Clea Ness, near Grimsby, where the coast rises to cliffs. A belt of sand skirts the land, of varying breadth; and the forest which once occupied the valley has now disappeared. The present bank is more extensive than the ancient, and is formed of the Roman bank, so as to gain a considerable extent of land.

The estuary of the Wash is occupied for the most part by salt marshes, dry at low water. Between these banks the water which flows into the estuary through the gallery is separated from the sea by the bank of the Wash, which in great part affords anchorage to vessels. The opening near the Norfolk coast is termed Lynn Well or Lynn Deeps, though in some maps the name of Lynn Deeps is given to the eastern channel of the one. The opening near the Lincolnshire coast is extended far above Lynn Deeps; it forms a narrow anchorage, sheltered to seaward by Long Sand, Dog's Head, and Outer Knock, a range of sand banks which run parallel to the coast to Spurn, north of Witham. The water in Boston Deeps is usually from three to six fathoms deep. The estuary of the Wash between Boston and Witham is occupied by a line of salt-marshes. There are other salt-marshes along the estuary of the Humber. (Arrow smith's Map of England; Greenough's Geological Map.)

The country of the Wash between Boston and Spilsby consists of alluvium, constituting a vast extent of flat or marshy land, from the border of which the subjacent strata rise and form comparatively elevated tracts. The alluvial soil occupies the whole of the coast, with the exception of the small insular counties of Clea Ness. It forms the bank of the Humber, and that of the Trent, as far up as Gainsborough. West of the Trent it spreads over Thorne Waste, or Thorne Level, from the midst of which rises the Isle of Axholme. This level was formerly occupied by a vast range of marshes, now separated from the sea by great abundance beneath the present surface, rooted in the firm ground in which they grew. [AXHOLME, ISLE OF.] West of the Wash the alluvium extends inland from Witham, and Blisby, to the river Witham, up the bank of which it extends far above Blisby. It forms a narrow strip, to a considerable distance (three or four miles) from each bank nearly up to Lincoln, where it is contracted into a narrow strip. Southward from the Witham the alluvium occupies the breadth of the county, being bounded on the southward by the banks of the Witham, Spilsby and Boston; and Northward by the Humber, and the banks of the Humber, and the banks of the Trent. The whole of the Wash and its vicinity is occupied by alluvial soil, and the coast of it is bounded by the alluvium of the great fan of country. The alluvium between Louth and the sea consists principally of unstratified clay mixed with sand and various marine deposits.

From Barton-upon-Humber to Burgh near Witham a line of chalk downs extends called the Wolds of Lincolnshire. These downs sink on the north and east beneath the alluvium described above. They form part of the great chalk formation, though occasionally interrupted or covered by other beds, extends through England from Fotheringhay near the Trent to near Scarborough and York. The thickness of the Lincolnshire Wolds is about forty or forty-eight miles, their average breadth six or seven, their greatest breadth twelve or thirteen. The chalk is of two colours, red and white, disposed in regular strata, the upper part of the chalk of the Wolds being red, and the lower part, a flinty, two to six inches thick, frequently occur. The chalk is found extending under the alluvium in the marshes round the Wolds: water is obtained from it by boring through the subjacent soil, and along the coast north and south of Saltfleet are natural outlets of water called provincially ' blow wells' ('flow wells' in Greenough's map), deep circular pits, which furnish a continual flow of water, and are vulgarly reputed to be unfathomable; they are presumed to communicate with the chalk. The chalk has been pierced by well-diggers about three or four hundred feet, but it is not mentioned whether the wells were sunk wholly in the chalk or through it.

The Wolds have their steepest escarpment towards the west, on which side the green-sand crops out and forms a narrow belt, skirting the chalk from Barton to Burton and through it. This formation is supposed to be thin. At the southern end of its extension the green-sand sinks under the alluvium of the fen district. The iron-sand occupies a narrow belt of land west of the green-sand. These two formations constitute a range of heath, being separated by a line drawn by Lincoln (where the oolites subside, forming a narrow gap of a mile or two wide, occupied by the Witham and the adjacent marshes), Spilsby, and Bourne to Uffington. This range of high land forms part of what have been termed the Spilsby and Bourne hills, and separates the valleys of the Anholme and the Lower Witham from those of the Trent and the Upper Witham; they have their steepest escarpment on the western side, which is called, south of Lincoln, the Cliff Row. This western escarpment runs southward from Lincoln between Gainsborough and Spilsby, and separates the valleys of the Anholme and the Lower Witham from those of the Trent and the Upper Witham; they have their steepest escarpment on the western side, which is called, south of Lincoln, the Cliff Row. This western escarpment runs southward from Lincoln between Gainsborough and Spilsby, and separates the valleys of the Anholme and the Lower Witham from those of the Trent and the Upper Witham; they have their steepest escarpment on the western side, which is called, south of Lincoln, the Cliff Row. This western escarpment runs southward from Lincoln between Gainsborough and Spilsby, and separates the valleys of the Anholme and the Lower Witham from those of the Trent and the Upper Witham; they have their steepest escarpment on the western side, which is called, south of Lincoln, the Cliff Row.
that part which belongs to this county; and vessels of 150 tons can ascend to Gainsborough, where the river is crossed by a bridge. The Idle, which comes from Nottinghamshire, rises on the Trent, and is joined by the Bykerdyke, a small stream, at the Idle, skirts the southern boundary of the Isle of Axholme, and falls into the Trent a little below Gainsborough on the left bank. The Bykerdyke and the Idle are navigable from East Retford. The old river Torne, another affluent of the Idle, rises on the north side of the Isle of Axholme, and cuts (not navigable), distinguished as the New river Idle and the New Torne, pass from the rivers after which they are respectively named, through Axholme Isle into the Trent.

The Ancholme rises near the village of Spridlington between Lincoln and Market Rasen, and flows north-east or seven miles to Bishop Brigg, where it is joined by a little river Rase from near Market Rasen. Here the navigation commences, and the stream is carried in an almost direct line by an artificial cut, about twenty miles long, into the Humbers, a short distance west of Barton. The old channel of the river winds much more than the navigable cut, but coincides with it in the general direction of its course. The river serves to drain marshy ground through which flows The Ancholme carries off the drainage of the valley between the Wolds and the oolite or stonebrash hills. The streams which fall into it are all small.

The Totey river rises from two springs, one near Normanby, and the other on the Brough Thorpe Dyke; near this spring, the western escarpment of the Woldes, between Binbrook and Market Rasen; the streams from these springs unite and flow by Binbrook and Totey into the German Ocean between Grimsby and Saltfleet. The length of the river is about thirty miles. The part of it which has been made navigable, the Louth navigation entering the sea there.

The Ludd rises south-west in the chalk range. It is formed by the junction of two or three brooks which unite above Louth and form north-east into the Great Ouse. There are several springs on which the stream is formed at Manton near Granthorpe sluice between Totey and Saltfleet, another near North Somercoats, and the third at Saltfleet. The length of the Ludd is about eighteen miles. The Louth navigation consists partly of this river and partly of an artificial cut from the village of Alvingham to the mouth of the Totey river: the navigation is about fourteen miles long.

The Witham or Withern Eau rises near Ashby Puerorum, and flows north-east into the sea at Saltfleet, where its estuary receives one of the arms of the Ludd; its length is about twenty-four miles. In the upper part of its course it is called the Calceby Beck. The Steeping rises near Ashby Puerorum, and flows south-east, not far from Spilsby, twenty miles into the sea. Wainfleet stands on a small feeder of this river, and from this point on the Beverley Watercraft can get up to the town. This river was formerly navigable for larger vessels, but the water has been drawn off by the dykes cut for the purpose of draining the adjacent fen. The navigation is about thirteen miles: and the extensive system of draining that has been carried on, the hydrography of the county becomes very complicated. The rivers have in several places been diverted from their natural beds, and now flow in artificial channels in direct lines; and are connected with artificial cuts, which open communication between rivers naturally unconnected. We must therefore comprehend the natural and artificial hydrography in one view, from the impossibility of drawing exactly the line of demarcation between them.

The most important of these is the Welland, which in the county, rises near the village of Thistleton, just within the border of Rutlandshire; but almost immediately enters Lincolnshire, flowing northward to the town of Grantham, and receiving by the way several brooks. Below Grantham the river flows south-east to the Trent, north-east to Lincoln; two or three miles of its course in this part are on the border of the county, which it separates from Nottinghamshire; the rest within the county. A few miles south-east of the Trent, the little River Brant, nearly fifteen miles long, from Brandon, north of Grantham. At Lincoln the river turns eastward, and flows to the neighbourhood of Bardney Abbey, where it receives the united stream of the Langwith river and the South Beck. The joined streams flow on between the chalk hills between Market Rasen and Louth, and its whole course is about eighteen miles. From the junction of the Langworth, the Witham flows south-east to the neighbour-
The West Pen Catch-water Drain, and the East Pen Catch-water Drain bound the fen district on the north side, and extend about ten and seven miles respectively; they do not immediately communicate. The Old and New Hammond Beech runs by a circular course from the Welland near Spalding to the South Forty-Foot near Boston. Its length is about twenty miles. The other cuts, provincially termed 'Leams,' 'Droves,' 'Drains,' 'Becks,' 'Eaux,' and 'Dykes,' are two numbers of short and distinct notches in the fen between Glen and that arm of the Welland called the Shire Drain; they are particularly numerous. The drainage of the northern fens is noticed elsewhere. [AXHOLME.]

Navigable canals, beside the Ancholme, Louth, Horncastle, Sleaford, Bourne, and others, have been already noted. There are two of them, the Foss Dyke, and the other, probably a Roman work, and appears to have been used for navigation previous to the Conquest. Henry I. had it cleaned out and the navigation improved. Some have supposed him to have introduced the canals for the purpose of navigation; but there is no need to assume any connection between the Car Dyke and the Foss Dyke, if, as is likely, the Witham was annually navigable for ships up the Witham and Brackish Water, through the Keadby Canal, which opens a communication between the Don or Dun navigation at Stainforth near Thorne in Yorkshire, and the Trent at Keadby in Lincolnshire. This canal, which is fifteen miles long, has a part of its course in the island of the Trent, near the mouth of the Keel.

Among the projected railways the Northern and Eastern were designed to pass through this county. It was to run from London by Cambridge to York. It was to enter Lincolnshire a little to the east of Market Dacy, and was to descend by a direct and level to the present county-road to Lincoln; and then thence one of consequence, above Gainsborough, to the Witham at Lincoln; its length is eleven miles, it is level throughout, but its water is four or five feet above those of the Trent. It is supposed to have been a Roman road. The Trent is the main county-road between Toryke, once a place of some consequence, above Gainsborough, to the Witham at Lincoln; its length is eleven miles; it is level throughout, but its water is four or five feet above those of the Trent. It is supposed to have been a Roman road.

The climate in the lower parts, where, in spite of extensive drainings, much marshy ground still remains, is not very healthy, and intermittent fevers are prevalent; but they are becoming much less frequent since the draining and improvement of the soil. The water in the lower parts is hard; it has a peculiar quality which has called it by various names, and those of its qualities varies in different districts, but the style, in which it is most used, is that of the 'soft water' of which the Dutch have long boasted.

The soil varies greatly in different districts. In some places it is as rich and productive as the granaries of the country, and as poor in others as to weary the patience and industry of the most persevering. The grazing land in this county cannot be surpassed in its capabilities for fattening cattle; and some of the drained fens and warp lands along the rivers possess a high degree of fertility when cultivated. From these circumstances it follows that every variety of cultivation which this soil presents may be observed in this county. There are still some lands which are under the old course of two crops and a fallow, while others are cultivated with all the care which is imposed by the system of double crops and harvests. To give a general idea of the various kinds of soil, we will follow the division given by A. Young in his Report of this county; premising however that it cannot be considered as entirely correct, but only an approximation to the truth.

He reckons of fen lands
776,960

Of loamy and sandy heaths, now mostly cultivated
118,400

Of wolds, chiefly chalk
234,880

Of various loams and sands of moderate rate quality
718,080

Making a total of
1,848,320

Upon the whole the majority of the lands in Lincolnshire may be caused to possess a soil of more than medium fertility, compared with the average of Great Britain, and the produce of the county, both in grain and cattle, is very considerable.

The temperature of Lincolnshire is nearly the same as that of the coast counties. In the winter, though the climate in the lower parts, where, in spite of extensive drainings, much marshy ground still remains, is not very healthy, and intermittent fevers are prevalent; but they are becoming much less frequent since the draining and improvement of the soil. The water in the lower parts is hard; it has a peculiar quality which has called it by various names, and those of its qualities varies in different districts, but the style, in which it is most used, is that of the 'soft water' of which the Dutch have long boasted.

The turnips, which are raised by means of this manure on the poorest lands, being fed off at the shops, lay the foundation of a productive course without any other manure.

The different manures which are used for the arable land in Lincolnshire, we must not pass over that of fish, especially that small fish which abounds in shallow ponds, the banks of the rivers, and fens. The fish is very putrid, and greatly assists the natural juices of the earth in producing vegetation.

On the richest fen lands the most profitable rotation consists of the following crops:-

1. Fallow; 2. Barley; 3. Beans; 4. Wheat; and this, alternated with the other, answers very well on rich lands.

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

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

- Wheat—seed, 3 bushels; average crop, 34 quarters.
- Barley—seed, 36 bushels; average crop, 43 quarters.
- Oats—average crop, 42 quarters.
- Beans—average crop, 33 bushels; average crop, 34 quarters.

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

The crops usually raised on the arable land are mostly the same as in other counties on similar soils. There is some woad cultivated in the neighbourhood of Boston on rich warp land; some saffron grown on the chalky soils, and lucern others, which are perfectly suited to the climate this useful plant ought to be cultivated as green food for horses and cattle. Cabbages and carrots are cultivated to a considerable extent; the former on the heavy clays, and the latter on the light and deep sands.

The Lincolnshire and of the neighbouring county of Leicester are some of the best feeding lands in the kingdom. The average number of beasts of a moderate size, about 70 or 80 stone of 14 lb., which can be kept on an acre, taken from twenty-six places, is stated by A. Young to be from 9 to 14. So that 12 acres of grass-land will feed—in summer, 1 bullock and about 63 sheep; and in winter, 3 sheep, for each 8 acres on average; and these lands will feed a bullock and 6 sheep per acre all the summer.

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

Great care is taken to grow grass hay for hay. It renders the pasture coarse, and the hay is not of so rich a quality as might be expected, owing, probably, to a want of care in making it. Grass-land is occasionally broken up to grow wood or flax on it. When this is done very judiciously, it increases the land far more than the security and profit it produces again; but, in general, it is a long time before the newly-sown herbage is so fattening as the old grass. When grass-land is broken up it gives such rich crops, that the temptation to overcrop it is too strong to be resisted; and once exhausted to a certain degree, it cannot be restored to its richness for a long time. When arable land is laid down to permanent grass in a rich, clean, and unexhausted state, the success is invariably; but it is often done without attention, and a failure is the consequence.

Great is the proportional improvements on land, by the side of some rivers in which the tide flows rapidly, that is of warping; or, in other words, retaining the water on the land so long as to let it deposit a layer of sand and mud. Thus a new soil is created over an old one; and this deposit, when the warping has been done, is dug as before. Such deposits, raised by warping, that expensive works have been raised for the purpose, and extensive tracts of poor land have been covered in a short time with a new soil of the finest quality, as the crops raised upon it will clearly show.

The tides are not effected by letting in the water of the rivers, which have a muddy current, by artificial channels and sluices, and retaining it there till low water. The river Humber carries off, in its course over various soils, all which are too heavy for the deposition. These consist of every kind of earth and portions of vegetable and animal matter. The tides, which are continually changing the direction of the current, keep this earth in suspension by the agitation which is produced; and thus, by the deposit laid in on the low grounds by the side of the river, by means of canals and sluices, the earth is soon deposited and forms a coat of mud of a highly fertile nature. Such is the quantity of soil contained in the water, that a layer one-tenth of an inch in thickness is often deposited between one tide and the next. Thus in a very short time a new soil is formed of any depth which may be desired, provided the land lies below the level of the river at high tides.

Besides creating a soil, the warping fills up all inequalities, and a perfect level surface is produced. Warp land possesses a natural power of production, which cultivation and manuring cannot imitate. The basis of the soil is fine clay and sand, the latter minutely divided and intimately mixed with the former, with a considerable portion of the well-dried matter. Very little of the earth can be extracted by analysis, but there is doubt a very trifling portion of it in an insoluble state, probably combined with lime or argilla. Sufficient experiments have not yet been made to show this combination, as likewise the galvanic current. The composition is so retentive, it is to be hoped that the attention of agricultural chemists will be turned to this subject. Considerable light may thus be thrown on the causes of fertility in soils.

The atmospheric air seems to act powerfully on the newly deposited soil; a great portion of it is deposited in an eight days, and is within twelve hours, such an alteration has already taken place on the surface, that the new deposit does not unite in one mass with the last, but a regular stratification can be observed, which shows the quantity deposited in each tide. Thus the air will sooner or later acquire the great fertility. It is therefore probable that the insoluble vegetable earth requires to be oxygenated and rendered soluble. The richest crops of beans, wheat, oats, and rape are raised without warping. The best warp lands are adapted for barley or turnips on account of its slimy nature.

It has added much to the produce of Lincolnshire, that the crops raised on the warp lands have enabled the farmer to employ all the manure necessary by the addition of straw and hay, a practice that appears to have the warp lands above the reach of the waters. As long as the level of the warp lands allows a fresh addition of warp, this system is highly advantageous; but as soon as the surface rises to higher ground, it is probable that the warp lands will be exhausted in time, like the Dutch and Flemish polders, and require manure like other lands. The best mode of treating warp lands which are too high to admit of being warped over again is to lay them down to the level of great furlong opening; the pasture upon them will soon equal the best old grass, carrying a bullock per acre, besides several sheep during the whole of the summer.

In a county which contains so rich pastures it is of great importance that the breed of cattle and sheep be of the best and most durable. It is most desirable that the possessors finer breeds of horses, oxen, and sheep. The Lincolnshire horses are celebrated for their size and power. Horncastle fair is the great resort of all the Lincolnshire dealers, who purchase hunters and carriage-horses at very high prices. The horses which are bred in the fens are apt to have rather too flat and broad feet, from the softness of the pastures there. This is a great defect when they are intended for speed on hard roads; but for farm purposes they answer as well as those bred on drier soils. The best breed of shire horses is the Lincolnshire. The warp lands are generally turned out for a time in the richer pastures to give them flesh before they are sold.

The oxen which are preferred for grazing are the short-horns, and some crosses of long-horns. Mr. Collier of Deeping describes them as being a breed of much better and more considerable success. Some rich proprietors and farmers are very careful in maintaining the reputation of their stock; and fine bulls are reared without regard to expense, which is very necessary in order to be repaid by the superiority of their produce. The most judicious graziers, and those who keep their cattle upon the warping lands, are considerably more profitable for grazing than the larger: an ox of about 80 stones of 14 lb. is thought to fatten more rapidly in proportion than either larger or smaller, provided the breed is good. If these animals are kept at the outset, and are not fattened until they are six or seven years old, they are disposed of with much advantage. The best breed of cows is the Shorthorn. There are not many dairies in Lincolnshire: breeding and fatting are considered more profitable and less troublesome. There is however some excellent cheese made of the Stilton kind. A. Young mentions Mr. Grundy, of Heath Mount, as being the highest price he has paid, which is 9s. 6d. per stone. Mr. Grundy is the descendant of his is now residing at Old Windsor, in Berkshire, where he makes the famous Forest cheese, which still goes by the name of Grundy cheese, and is the best cheese of the Stilton kind made in England. He was brought from Lincolnshire by George M., and established in a dairy in Windsor Forest. The sheep which are bred in this county are principally of the long-wooled, commonly called Leicester sheep. But the two counties differ only in the great proportion of unfenced lands to be found in Lincolnshire. The rich upland pastures are similar in both counties. The old Lincoln sheep are larger than the improved Leicester sheep.
and carry a heavier fleece; they are also harder; the latter however are generally preferred, from their greater propensity to fatten. A cross has been produced which par excellence the qualities of both breeds, and is preferred by farmers for the table.

There is nothing particular in the breed of pigs, except that it has been much improved of late years by crossing with improved breeds.

The market towns in Lincolnshire are:—Alford, Wharf
Thursday, November 8; Burton-upon-Humber, Trinity
Thursday; Belton, September 29; Boston, May 4, Au-
 gust 5, November 16, and lasts four days, December 11;
Bourne, March 7, May 6, October 29; Brigg, August 5;
Caneworth, November 19; Crowland, February 5; Cus
cat, Friday and Saturday before Palm Sunday, Friday and
Saturday before Whit Sunday, Friday and Saturday after
Old Michaelmas-day; Caythorpe, Good Friday; Corby,
August 26, Monday before October 11; Collingham, April
24, May 24, last Monday of line day before May 22; Don-
don, May 26, August 17, September 4, October 17; Epworth,
first Tuesday after May 1; first Thursday after Sep-
tember 29; Falmingham, Ash Wednesday; Palm Mon-
day, May 3, June 16, July 3, Thursday after Old Michael-
mas-day; November 19 and 22; Gainsborough; Eek,
Wednesday, October 20, if it falls on a Wednesday, then
the Wednesday after; Grantham, Easter Eve, Holy Thurs-
day, July 10, December 17; Heckington, Thursday before
October 16; Holbeach, May 17, second Tuesday in Sep-
tember; Horncastle, Monday, August 29, September 14,
Kirtby-Lindsey, July 18, December 21; Lincoln,
Tuesday to Friday in the last whole week in April, July 5,
first Wednesday, Thursday, and Friday after September 12,
November 28, Louth, third Monday after Easter Monday,
third Wednesday, second Thursday after the Fast, Au-
 gust 26, September 25, Wednesday before December 6;
Spalding, Monday before Whit Monday, Monday after ditto,
Monday following after Whit Monday if it fall in May (if
not, there is no fair), first Monday in July, old style;
Stanford, Tuesday before February 13, Monday before a
Midlent, Midlent Monday, Monday before May 12, Mon-
day after Corpus Christi, August 5, November 9; Stow
Green near Sleaford, July 4; Swineshead, first Tuesday in
June, Tuesday, October 2; Tattershall, May 15, September 25;
Wainfleet, Thursday, May 24, and Monday in May, July 8, Au-
 gust 24, October 24; Withingley, July 14; Wragby, Holy Thurs-
day, September 29.

Lincolnshire, that goes from the Lindsey country, is
divided into three parts, which are termed, Lindsey,
Kesteven, and Holland. Lindsey, which is a large
Bede under the name Lindese, and in the Saxon Chronicle
by the names Lindissi, Lindeshe, and Lindesige, is by far
the largest, and comprehends all that part of the coun-
y that is drawn from Lindsey up to the Trent, partly
along the Foss Dyke, to Lincoln (which city,
with a small territory to the south-east, is included in it),
then by the Witham near Boston, and from just above
the town north-eastward to the sea between Boston and
Winterton. The, like that of Lindsey, is
removed from Lindsey, the Roman name of Lindsey.
From
the, with the subjoined epithet Colonies, came
Lincoln, and thence Lindsey and Lincoln; and from the name
without the epithet Lindsey. The latter part of this name
appears to be derived from the word Lindsey, Lindesei,
a name sufficiently descriptive of the district, which is
insular, by the sea, the Humber, and the Trent, the Foss Dyke
and the Witham, with their connected marshes.
Kesteven comprehends the south-western part of the
county, and is delineated by a line drawn from Lindsey to
the western side of Lindsey, and from thence
south-western Lindsey encroaches upon these boundaries. It is
reached by a line drawn south from the Witham, at the
junction of the Kyme, or Sleaford river, to the Welland,
and thence to the Trent and Croyland. The origin of this name
is very obscure.

Holland, called by Ingulphus Holandica, comprehends
the rest of the county, including the greater part of the
fens. The name appears to be derived from the Saxon Hol,
'a hole or hollow,' a name not inappropriate to the fen dis-
trict, forming, as it does, a vast basin in the middle sur-
rounding higher ground; or perhaps from Hol., a ditch,
(another form of the same word), an epitaph equally appro-
riate.

These divisions are of great antiquity; they are also char-
acterized by distinct natural features. The most dis-

cinctural name, is distinguished by its fens.
Lincolnshire is further divided into wapentakes, hun-
dreds, and soke. These, with their situation in the county,
their chief town, area, and population in 1831, are as fol-
 mọi:—

I. Parts of Lindsey.

<table>
<thead>
<tr>
<th>Name</th>
<th>Acres (S.E.)</th>
<th>Pop. 1831</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aveland</td>
<td>45,280</td>
<td>6,407</td>
</tr>
<tr>
<td>Belton</td>
<td>53,220</td>
<td>9,978</td>
</tr>
<tr>
<td>Bolingbroke</td>
<td>53,470</td>
<td>6,430</td>
</tr>
<tr>
<td>Brigg</td>
<td>56,230</td>
<td>7,842</td>
</tr>
<tr>
<td>Carlby</td>
<td>54,570</td>
<td>5,900</td>
</tr>
<tr>
<td>Crowland</td>
<td>50,270</td>
<td>7,243</td>
</tr>
<tr>
<td>Dukeries</td>
<td>52,720</td>
<td>7,616</td>
</tr>
<tr>
<td>Grantham</td>
<td>57,320</td>
<td>9,540</td>
</tr>
<tr>
<td>Horncastle</td>
<td>56,900</td>
<td>6,322</td>
</tr>
<tr>
<td>Lincoln, city and liberty</td>
<td>17,560</td>
<td>11,843</td>
</tr>
<tr>
<td>Total of parts of Lindsey</td>
<td>961,970</td>
<td>172,088</td>
</tr>
</tbody>
</table>

II. Parts of Kesteven.

<table>
<thead>
<tr>
<th>Name</th>
<th>Acres (S.W.)</th>
<th>Pop. 1831</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderby</td>
<td>42,460</td>
<td>6,149</td>
</tr>
<tr>
<td>Grantham, borough and soke</td>
<td>25,400</td>
<td>10,780</td>
</tr>
<tr>
<td>Total of the parts of Kesteven</td>
<td>445,660</td>
<td>81,830</td>
</tr>
</tbody>
</table>

III. Parts of Holland.

<table>
<thead>
<tr>
<th>Name</th>
<th>Acres (S.W.)</th>
<th>Pop. 1831</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elloe</td>
<td>148,560</td>
<td>29,314</td>
</tr>
<tr>
<td>Kirton</td>
<td>71,660</td>
<td>14,777</td>
</tr>
<tr>
<td>Skirbeck</td>
<td>35,106</td>
<td>13,466</td>
</tr>
<tr>
<td>Total of Holland</td>
<td>256,330</td>
<td>62,347</td>
</tr>
<tr>
<td>Total of the county</td>
<td>1,663,850</td>
<td>371,465</td>
</tr>
</tbody>
</table>

The county contains the city of Lincoln, the boroughs and
market-towns of Boston, Burton-upon-Humber, Sleaford;
and the market-towns of Alford, Barton-upon-Humber,
Bolingbroke, Bourne, Caistor, Corby, Crowle, Deering,
Donington, Epworth, Falmingham, Ford, Gainsborough,
Gainsborough, Grantham, Bolingbroke, Holbeach, Croyland,
Hill, and Whitby, as also the towns of Boston, Grantham,
Sleaford, and Sleaford. Some of these accounts are given
elsewhere. [Axeholm; Hol; Kesteven; Lincoln; Boston; Grantham; Stamford.]

Lincoln is on the north bank of the Witham, just at the
place where it passes through an opening in the stonebrash
hills, 134 miles from London, through Ware, Biggleswade,
and Peterborough. It was a place of considerable importance
under the Romans. In the time of the Saxons it was also
a place of consequence; and notice of its occurrence in the
struggles of the Saxons and Danes. At the time of the
Conquest it was one of the most important places in the
kingdom, and the emporium of a considerable trade. Will-
liam the Conqueror ordered the erection of a strong castle
here A.D. 1066. The erection of this castle is said to have
costed the demolition of two hundred and forty houses. At
the time of the Domeday survey there were in Lincoln
1079 houses and 900 burgesses. The prosperity of the place
appears to have been further promoted in the time of Henry
I. by clearing out the Fos Dyke, and making it again
available for navigation. This increased the advantages of
the navigation for sea-borne vessels of the Witham, rendered
the situation of Lincoln peculiarly favourable for commerce.
In the reign of Stephen their elevation was increased by the
king, who, not to out the city, but the empress escaped.
The castle was shortly after surprised by some of her par-
tisans, and having been besieged by the king, who had the
townsmen in his interest (A.D. 1141), was relieved by the
approach of Gauth, son of Edward III., who greatly imposed
him. Stephen, upon the approach of the relieving force, gave
battle to it; but, by the desertion of Alan earl of Richmond,
he was defeated and taken after fighting with the greatest
intrepidity.

The civil wars of the reign of John the town was taken
by Gilbert de Gaunt, one of the barons in the interest of
Louis, Dauphin of France, who had created him earl of
Lincoln. The castle however held out for the king and was
besieged by Gilbert, who, having that John was approach-
ing, caused the castle to be made fast. The garrison, on
having lost his baggage in the Wash, and died of grief, Gil-
bert retook the town and reinvested the castle. The earl of
Pembroke, regent during the minority of Henry III., ad-
vanced to relieve it, and Pel de Brent, a chief baron, set
himself with a reinforcement into the castle. The besiegers,
who were supported by a body of
French, were attacked on both sides; and the town, in which
they attempted to defend themselves, was stormed by the
earl of Pembroke, the count of Champagne, and the
commanders of all the French army; many of the insurgent barons and other
prisoners of war were taken, and the part of the Dauphin
was crushed. The battle was fought June 4, 1218. At a
subsequent period the castle was in the hands of John of
Gaunt, son of Edward III., who greatly improved it.

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

The city is built on the southern slope and at the foot of
a hill, on the summit of which is the cathedral. It con-
tains twelve parishes, and part of a thirteenth, the
remainder of which, with two others, are locally within the
limits, though not in the jurisdiction of the city. There are
four parishes in the liberty of the city, on the opposite side
of the river, and of the city church, and the included
parishes, contain altogether 17,560 acres. The town is irregularly laid out; the
principal street is along the road from London to Barton-on-
Humber, which extends right through the place, crossing
the Ouse, and running along the hill on which stands the
cathedral. This street also extends a considerable length
south of the Witham. The streets are paved, lighted
with gas, and supplied with water from public conduits or
fountains. There are several small bridges over the Witham or
over the Ouse, and some very handsome stone bridges.
The Witham has an arch of nearly 22 feet span, and
11 feet high; it is considered to be at least five hundred
years old. There are market-places or market-houses for
corn, cattle, meat, and butter, in different parts of the city;
the market-place is near the castle.

The most interesting of the public buildings is the cathe-
dral, which is advantageously situated on the summit of the
hill, and may be seen for many miles across the flat country
to the south-east or south-west: its three towers have at a
distance a very fine effect. It has been erected at different
periods, and consists in consequence of various styles of
architecture: the predominant style is the early English, of
a remarkably rich and beautiful character. The cathedral may
view with any, and has been by some judges preferred even to
York. It is much enclosed by buildings on the north, south,
and west sides; but is more open on the east. The nave
is very fine, and the piers in this part are particularly rich;
and though the side aisles are unusually narrow, the effect
of the whole is excellent. The western front, which embraces
the width of the nave and aisles with the side chapels (or, as
some think, with the aisle), is of the most magnificent
kind, partly early English: it has two towers whose height
from the ground is 180 feet. There were formerly spires
upon these, of the height of 101 feet, but these were taken
off many years since. The roof of the nave extends over
the central doorway are several statues of the kings
of England, from the Conquest to Edward III., under Decorated
canopies. The central or great transepts are chiefly in the
early English style; they have aisles on the eastern side
of the nave, and one to the west of the central doorway. There
are at the ends of the transepts circular windows that at the end of the south transept is one of the
finest circles in the early English style remaining. The 'Gacon
court,' or porch attached to the west side of the south tran-
sept, was probably fitted up by John the Conqueror, par-
cularly deserving of attention for the intricacy and beauty
of its mouldings, and the singularity and excellence of
its general composition. At the intersection of these transepts
with the nave and choir is the central tower, 133 feet square
wide by 134 feet high. The eastern end of the transepts is
rather small, which circumstance renders the lantern
obscure. The height of this tower from the ground to
the summit of the pinnacles is about 300 feet. The choir is a
three-decker, with the great east window divided into an
transept; though, like them, it is of early English char-
ter. It is separated from the nave by a rich stone screen.

The eastern end of the choir, with the Lady Chapel, is of
transition style between the early and decorated English
styles. It is finished in the 15th century, and finished with
every effect of the kind. Its windows are filled in, and the
lights, is a fine composition. The cathedral is at this end
encompassed with buildings; a better view of it can con-
sequently be obtained. There are two transepts to the east
ward of the principal transepts, and there are several chapels
attached to the eastern end of the church. The dimensions
are as follows:—Exterior length of the church within its buttress
524 feet; interior length 492 feet; width of the
cathedral (interior width, we believe, of the nave and choir with the
respect to the aisles, is 140 feet; height of the vaulting of the
cloister 80 feet; width of the cloister 174 feet; interior
length of the principal transept 250 feet, interior
width 222 feet; width 66 feet. Smaller or eastern transept,
length 170 feet; width, including the side chapels, 4
feet. The dimensions are, we believe, when not otherwise
specified, interior dimensions.

The old bell, called the Tom of Lincoln, which was cast
in 1610, and hung in the northernmost of the west tower
became cracked in 1627, and being broken up in 1834, was
replaced by a new one, made up of an iron column, and
in 1853 by another. There are two quarter bells by Mr. Thomas Mears of London,
placed in the Rood (or central) tower in 1815. The
new bell, which is larger and heavier than the old one, is 6 feet
10 inches in diameter at the mouth, and weighs 5 tons
1 cwt. 13 quintals or 57 cwt. 220 pounds. The height of the bell is 42
14 cwt. The new bell is more musical than the old one, but
not nearly so loud and sonorous. It is the third bell ever for
in the kingdom; being exceeded only by 'Mighty Tom'
Oxford (7 tons 15 cwt.) and 'Great Tom' Exeter (6 tons
12 cwt.) the latter of which is the largest in England. It
hangs in the chapter-house. The cloisters enclose a quadrangle
118 feet by 91: three sides remain in their original state
and are of good decorated work; over the fourth (the north
side) is a library built by Dean Honeywood in the late
16th century, and having a collection of books, with some curious specimens of Roman
antiquities. In the enclosure of the cloisters, some few
below the surface, is a handsome tessellated pavement
Lincoln abounds in monastic and other remains of ancient architecture. There are several ancient gateways, as the Chequer or Exchequer Gate in the Cathedral Close, and the Stonebow in the High Street; the remains of a fort called 'Lacy Tower;' a tower of three stories, incorporated in a modern house, called 'the Priory;' and several other buildings. 'The Grey Friars' is a modern building, the lower story of which is occupied as a spinning-wheel, and lies some feet below the surface of the ground; part of the upper story, formerly the chapel, is now used for a free-school, and the rest forms part of the stables of John of Gaunt's Palace and of a building called John of Gaunt's Stables present some interesting Norman and early English features. In the gable of the palace is a beautiful oriel window.

The population of the city and liberty, in 1831, was 11,843, to which may be added that of the three parishes locally included, 1360; together, 13,203. The chief trade is in flour, which is sent to Manchester and London, and there are some extensive breweries noted for their ale. There are now eight or ten steam-engines in the city; a few years ago there was not one. The county assizes and the election for the northern division of the county, and quarter-sessions for the city and liberty, are held here. There are a large hospital and assembly-rooms.

There are several dissenting places of worship, several public libraries, two newspapers, a flourishing mechanics' institute, and several book-societies. There are a general dispensary, a lunatic asylum, a county hospital, a lying-in-hospital, charitable almshouses, a work-house for the poor, and the very extensive work-house and infirmary of the city.

Lincoln was incorporated by charter of Henry II., but the governing charter was that of Charles I. By the Municipal Reform Act the city is divided into three wards, and has a mayor, six aldermen, and eighteen councillors. The city council consists of about 67 members, besides the mayor. The court-house for the city is modern; the gaol is not large enough to admit of the proper classification of prisoners.

The city returns two members to parliament: it first exercised this privilege in the reign of Henry III. The parliamentary council, in 1831, consisted of 10 men and 621 town-householders: total, 1124. The parliamentary borough comprehends the city and a small portion of the liberty.

There were in the city, in 1832, two infant-schools, with 323 children; five dame-schools, with 67 children; thirty-two day-schools (including two endowed schools, with 86 children), with 776 children; four boarding and day schools, with 150 to 180 children; one national school, with 474 children; an endowed school, with 796 children. There were at the same time, besides the liberty, the boarding-school, with 30 to 40 children; six day-schools, with 30 to 40 children; three of them partly or wholly supported by subscription, containing 246 children; and five Sunday-schools, with 32 children.

Grimsby is in the wapentake of Bradley Haverstoe, in the parts of Lindsey, on the south bank of the Humber, near its mouth. In the time of Edward III. Grimsby was of sufficient importance to furnish the king with eleven vessels and 170 mariners for his armament against Calais. Thus, the gradual blocking up of the harbour by the accumulation of mud and sand led to the decay of the port, until it was renovated by the spirited exertions of some of the neighbouring landed proprietors about the beginning of the present century. The landing at low water is now ebbing, and the water is now ebbing a second or third time. The north or outer sea is now erecting to remedy this inconvenience. The parish of Grimsby, the township of Clee, and the hamlet of Weelsby, comprehend 2110 acres, and had in 1831 a population of 4919, mostly employed in the fisheries. The town consists of two parts: the older part of the town is irregularly laid out, and is at the head of the harbour, about a mile from the sea; the new part, commonly called 'the Marsh,' consists of three streets parallel to the harbour, and is more than a mile from the sea, and is supplied with a lock, &c., at one of the mouths of the Laceby Beck, extending inland about a mile southward from the sea: vessels drawing sixteen feet can enter it with high-water at neap tides. There are large warehouses and timber-yards and extensive docks, where vessels of the largest size are discharging, and there is a tide harbour, the Mouth of Grimsby, with a lock, &c., at one of the mouths of the Laceby Beck, extending inland about a mile southward from the sea: vessels drawing sixteen feet can enter it with high-water at neap tides. There are large warehouses and timber-yards attached to the harbour. There is a large cotton-mill, and a

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large font of early English character. There is a small ill-managed borough gaol. There are a tax-yard, two bone-mills, some corn-mills, and a large revery for making patent cordage of phonumexenum, which has not been very successful.
The market is in the town centre.
Grimsby is a borough by prescription; the council under the Municipal Reform Act consists of four aldermen and twelve councillors. The parliamentary borough, which was considerably enlarged by the Boundary Act, includes, besides the borough of the town of Grimsby, and the parishes of Great Coates, Little Coates, Bradley, Laceby, Waltham, Scartho, and Cleo, with the township of Cleethorpe, containing an additional population of 864; making in all 6899. Cleo has an ancient church, with a spire of 264 feet.
The living of Grimsby is a vicarage, in the archdeaconry of Lincoln, of the clear yearly value of 53£. There are several dissenting places of worship. The parish, in 1833, one infant school, with 20 children, partly supported by the corporation; a grammar-school, with 60 boys and 20 girls; a school preparatory to the grammar-school, with 54 boys and 19 girls; and a school for dissenters, with 22 children: the first two of these schools were wholly and the third partly supported by the corporation; four other day-schools, with 114 children; one boarding-school, with 23 children; and one Sunday-school, with 110 children.
Alford is in the hundred of Cadeby, in the parish of Lincoln, in the county of Lincoln, and the archdeaconry of Lincoln, and the deanery of the Lace family, and subsequently into those of John of Gaunt, Henry IV., son of John, was born in this castle, and took from it his surname of Henry of Bolingbroke. The castle is in the town. The castle / There is a large macadam of earthenware. The church is in the town. The church is a market-place.
Bolingbroke is in the soke of Bolingbroke, in the parts of Lindsey, 131 miles from London, by Boston. There was here an ancient castle, built by William de Romera, earl of Lincoln, which after some destructions it was repaired into a castle, which was the seat of the family, and subsequently into those of John of Gaunt. Henry IV., son of John, was born in this castle, and took from it its name of Henry of Bolingbroke. The castle is in the town. The church is in the town. The church is a market-place.

...
handsome, chiefly of perpendicular character; the tower has eight pinnacles and a rich battlement. A small gnell was erected thirty years ago on the site of the ancient castle, and has been since enlarged. The market is on Thursday. The living is a rectory united with the vicarage of Laughton, both in the archdeaconry of Lincoln, of the clear yearly value of £111. There were in the parish in 1833 an endowed day-school with 30 children; four other day-schools with 70 children; and two Sunday-schools with 136 children; and one Sunday-school with 131 children.

Glanford-Brigg, or Glanford-Bridge, is, by familiar abbreviation, Brigg, is in the wapentake of Yarborough, in the parish of Lindsey, and is a market-town about 15 miles from Boston, and 6 from Louth. There were in 1833 a dame-school with 9 children; one Sunday-school with 11 children; and one Sunday-school with 37 children.

Holbeach is in the wapentake of Elloe, in the parts of Holland, 109 miles from London, a few miles to the right of the road to Boston. The parish comprehends an area of 2926 acres, and is situated in the vicinity of Lincoln, and has a considerable trade. The town is indifferently built and is in a low marshy district. It is supposed to have been a Roman station; some think that it was the Bannorium of Raventias. There are traces of a fortification yet visible, which was a parallelogram enclosing an area of twenty acres, and comprising a considerable part of the modern town. Roman coins and other antiquities have been discovered, and at the point formed by the junction of two market-roads, are supposed to be the site of the old town. This has been much improved, and consists of respectable well-built houses. The church has been in great part rebuilt of late years. Part of it is as ancient as the time of Henry VII. There are several Dissenting meeting-houses. Corn and wool are the principal articles of commerce, which has been much promoted by the opening of the Horncastle navigation from this town to the Witham. The market is held on Saturday, and there are three fairs in the year, one of them being the great market fair, and the most important. The living is a vicarage in the archdeaconry of Lincoln, of the clear yearly value of £112, with a glebe-house. There were in 1833 three day-schools with 101 children; one Sunday-school with 11 children; and five Sunday-schools with 149 children; and three Sunday-schools with 275 children.

Horncastle is in the wapentake of Horncastle, in the parts of Lindsey, 136 miles from London by Sleaford and Tattershall. It is supposed to have been a Roman station; some think that it was the Bannorium of Raventias. There are traces of a fortification yet visible, which was a parallelogram enclosing an area of twenty acres, and comprising a considerable part of the modern town. Roman coins and other antiquities have been discovered, and at the point formed by the junction of two market-roads, are supposed to be the site of the old town. This has been much improved, and consists of respectable well-built houses. The church has been in great part rebuilt of late years. Part of it is as ancient as the time of Henry VII. There are several Dissenting meeting-houses. Corn and wool are the principal articles of commerce, which has been much promoted by the opening of the Horncastle navigation from this town to the Witham. The market is held on Saturday, and there are three fairs in the year, one of them being the great market fair, and the most important. The living is a vicarage in the archdeaconry of Lincoln, of the clear yearly value of £112, with a glebe-house. There were in 1833 one endowed day-school with 101 children; a day-school, partly supported by subscription, with 101 children; six other day-schools with 149 children; and three Sunday-schools with 275 children.

Laughton, the Seat of Lord Lindsay, is a large and handsome building, consisting of a nave, chancel, aisles, and square tower, surmounted with a high octagonal spire. There are two Sunday-schools in the parish, with 375 children.

Louth is in the hundred of Louth Eske, in the parts of Lindsey, 148 miles from London by Boston and Spilsby. It is a market-town, with a considerable trade. There were in 1833 an infant-school with 130 children; a dame-school with 20; a free grammar-school, with a large endowment, and 86 children; another endowed day-school with 22 children; thirteen other day-schools with 322 children; a national day and Sunday school with 284 scholars during the week, and 49 on Sundays; and three Sunday-schools, with 580 children.

Market Rasen, or Raishin, is in the hundred of Walbrook, in the parts of Lindsey, on a little brook, the Rase or Raisin, which joins the Witham, nearly 145 miles from London by Lincoln. The parish comprehends an area of 1045 acres, and has in 1831 a population of 1425, about one-sixth agricultural. The parish-charge is considerable. The Roman Catholics and Methodists have meeting-houses: there is an hospital or almshouse for four poor men. The market, which is in the charge of the Rev. Mr. Dukinfield, is held on Saturday, and is considered a very considerable one. There are in the market-place, butchers, bakers, and other shops in considerable numbers. The living is a vicarage in the archdeaconry of Lincoln, of the clear yearly value of £123, with a glebe-house. There are several Dissenting places of worship. There were in 1833 an infant-school with 130 children, a dame-school with 20; a free grammar-school, with a large endowment, and 86 children; another endowed day-school with 22 children; thirteen other day-schools with 322 children; a national day and Sunday school with 284 scholars during the week, and 49 on Sundays; and three Sunday-schools, with 580 children.

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Sleaford is in the wapentake of Flaxwell, in the parts of Kesteven, 112 miles from London on the road to Lincoln. It lies on the little river Slea, or Sleaford, which flows into the Trent at Sleaford, and is thence navigable to the adjacent village of Old Sleaford. Situated conjecturally, but on insufficient grounds, that the Romans had a station here. Roman coins have been dug up. The bishops of Lin...
Elloe, Cislertian the 1831 a above the dame-school the school-house Leland's. The parish comprehends 1890 acres, with a population in 1831 of 2450, scarcely any of it agricultural, besides the hamlet of Holdingley, 1360 acres, and 137 inhabitants, chiefly agricultural. The town has been much improved of late, especially in the improvement of Leland's almshouses. The church consists of a nave with side aisles, and a large chapel or transept on the south side, and another transept on the north, and a chancel without aisles: there is a tower surmounted with a spire rising to the height of 144 feet. The steeple is the most antiquated church, and in the north aisle of the nave, the upper part and the spire being of some later date than the rest: the aisles and the north transept are of decorated character, and the piers and arches of the nave, the chancel, and the chancel chiefly of perpendicular date. There is a screen: and excepting in the case of most parts of the church are excellent. There are some Dissenting places of worship; and a town-hall of modern architecture. The market is on Monday. The Slaford canal is cut from this town to the Witham. The town is a vicarage, exempt from the archdeacon's visitation, of the clear yearly value of 170l., with a glebe-house. There were in 1833, in the parish, an endowed day-school with 40 children; seven other day-schools with 358 children; and three Sunday-schools with 31 children.

Spalding is in the wapentake of Elloe, in the parts of Holland, 101 miles from London on the road to Boston. It was a place of some consequence even in the Saxon times. There was a monastic establishment here, which underwent many changes. Its revenue at the dissolution was £18s. 3d. gross, or £76s. 8s. 11d. clear. The parish comprehends 1270 acres, with a population in 1831 of 6497, about one-third agricultural. The town is situated on the banks of the Welland, in a fenny district, but well drained; the street is narrow and well paved. The church, which is mostly of perpendicular character, has a fine tower and crocketed spire. There is a town-hall or court-house, a substantial brick building, in the marketplace. There are assembly-rooms and a small market-hall used for the neighbouring agricultural district. The Welland is navigable for vessels of 40 or 50, or even 70 tons, up to the town, and there is a considerable coasting and carriage trade. The market is on Tuesday, and is very prosaic. Long wood is sent from this neighbourhood for the supply of Norwich and the manufacturing towns of Yorkshire. The living is a perpetual curacy, in the archdeaconry of Lincoln, of the clear annual value of 390l., with a glebe house. There were in 1833, four grammar-schools, seven endowed free-schools for boys; a free-school called 'The Bluecoat-school,' with 50 free and 24 pay scholars; twenty-four other day-schools with 614 children; and five Sunday-schools with 765 scholars.

Lincolnshire.

Castle of Belingbrough, in the parts of Lindsey, 1334 miles from London through Boston. The parish comprehends 2340 acres, with a population, in 1831 of 1384, of which a very small portion was agricultural. The market is on Wednesday, and is a small market-place. The town-hall, a plain brick building on arches, stands at one end of a row of houses in the centre of the market-place, and the market-cross, a plain octagonal shaft rising from a quadrangular base and terminating in a vane at the other end. The church is an irregular pile, having at the west end a handsome tower of later date than the rest of the building: it contains several ancient monuments. There is a weekly market on Monday. The living is a perpetual curacy, in the archdeaconry of Lincoln, of the clear annual value of 109l., with a glebe-house. There were in 1833, six grammar-schools, seven endowed free-schools for boys; a free-school called 'The Bluecoat-school,' with 50 free and 24 pay scholars; twenty-four other day-schools with 614 children; and five Sunday-schools with 765 scholars.

Lincoln.

It was in the wapentake of Kirtom, in the parts of Holland, 1133 miles from London, and 7 from Boston. The parish of Tattershall, founded 1144 by Robert de Greville; the yearly revenues at the dissolution were 175l. 19s. 10d. gross, or 167l. 12s. 3d. clear. Leland reduces them to 86l. In this monastery King John appears to have rested after his escape with his life in crossing the Wash, and lost his baggage. His death, which occurred at Newark shortly after, was by some ascribed to poison administered by a monk of Swineshead. The parish comprehends 6100 acres, and had in 1831 a population of 1994, about half agricultural. Swineshead was formerly a port, and the sea flowed up to the market-place, where there was a harbour. The market is on Thursday, but it is almost disused. The church is a handsome spacey building, with a lofty spire. The living is a vicarage, in the archdeaconry of Lincoln, of the clear yearly value of 240l. There were in the parish in 1833 an endowed day-school with 90 scholars; six other day-schools with 114 scholars; and one Sunday-school with 12 children. There is in the town a circular Danish encampment, sixty yards in diameter, surrounded by a double fosse.

Tattershall is in the wapentake of Gartree, in the parts of Lindsey, 127 miles from London through Sleaford. It is a market town, and the county town for the district, which contains nearly 12,070 acres, and is in the archdeaconry of Lincoln, of the clear yearly value of 110l. There were in 1833 a boarding and day-school with 25 children; two day-schools with 10 or 12 children in each; a national school attended by 104 children in the week and 62 on Saturday, at which 32 children are admitted. Mineral waters have lately been discovered at Woodhall between Tattershall and Horncastle, which are coming into repute: handsome baths are built, and an hotel is in course of erection.

Wainfleet is in the wapentake of Candlehoe, parts of Lindsey, 133 miles from London through Boston. If supposed to have been a Roman station, the Vainonans of the geographer Ravenus. The haven was antiently freewedged by ships, but it was going to decay in Leland's time. The waterway has been so lowered by a drain, that it is not used only for small craft. The town is supposed to have stood formerly higher up the creek, where the old church of All Saints stands. The parish of Wainfleet All Saints comprehends 1830 acres, with a population in 1831 of 1333, about one-fourth or one-fifth agricultural; that of Wainfleet St. Mary comprehends 6440 acres, with a population of 660, almost entirely agricultural; together 8270 acres, with a population of 1792. All Saints church is a handsome and ancient structure; the nave and tower date of the 13th century. St. Mary's church is also much decayed. There is a school-house for the free grammar-school, founded by William of Wainfleet, bishop of Winchester, in the fifteenth century. The market is held on Saturday, but is almost disused. The living of All Saints is a rectory, of the clear yearly value of 322l.; that of St. Mary is a vicarage, of the clear yearly value of 21l., with a glebe-house; both are in the archdeaconry of Lincoln. There were in 1833, in the parish, one grammar-school with 16 children; William of Wainfleet's free grammar-school, with 42 children; an endowed free-school, supported by the governors of Bethlehem Hospital, with 133 children; nine other day-schools with 222 children; and three Sunday-schools with 307 children; one of the Sunday-schools, with 105 children, was supported by the governors of Bethlehem Hospital. Wil-
The parish comprehends 1710 acres, with a population in 1831 of 601, more than a fourth agricultural. The town is neatly built and picturesque. The parsonage is a neat house, built in 1837, by Mr. Turner, the proprietor of the town. There is a Methodist meeting-house; also an almshouse for six clergymen's widows and six other persons, with a chapel. The market is on Thursday. The living is vicarage united with the rectory of East Tor; the town was formerly in the manor of Lindsey, and of the joint yearly value of 327l., with a glebe-house. There were in 1833 an endowed day-school with 20 children; another day-school with 25 children; and a Sunday-school with 28 children.

The following places and market towns, now disused.—Bisbrooke is in Walscote Hundred, parts of Lindsey. It lies in the Wolds between Caistor and Louth, out of any great road. It consists of two parishes, St. Gabriel and St. Mary, having a joint area of 6670 acres, with a population in 1831 of 1673, nearly two-thirds agricultural. There are extensive rabbit-warrens in the neighbourhood, and considerable business is done in dressing skins for furriers. The living of St. Gabriel is a vicarage, of the clear yearly value of 75l., exempt from the archdeacon's visitation; that of St. Mary, vicarage, in 1833 had a joint yearly value of 291l.

There were in 1823, in the two parishes, four day-schools with 75 children, and two Sunday-schools with 164 children. Burton-on-Stather and other places of the same name are Burton-Upon-Stather, is in the wapentake of Manley, parts of Lindsey, 169 miles from London through Newark and Gainsborough. The parish comprehends an area of 3860 acres, with a population in 1831 of 760, three-fifths agricultural. The church of which was formerly more extensive, but different calamities that have happened to it have combined with the rise of Gainsborough to reduce it; its market has consequently been given up of late. It is on a hill overlooking the Trent, upon the bank of which there is a high-road 20 minutes by coach with a gateway of good ashlar between Fittebridge, both in the archdeaconry of Stow, and of the joint yearly value of 752l., with a glebe-house. There were, in 1833, five day-schools (one partly supported by a yearly donation), with 130 children; and two Sunday-schools, with 96 children.

Crowland or Croyland is in the wapentake of Elloe, parts of Holland, near the old channel of the Welland, and near the south border of the county, 87 miles from London, through Huntington, Ramsey, and Thorney. It is a place of 2000 acres; it has 250 acres under the hamlet of Croyland, which was restored, and was again destroyed by fire, and was rebuilt a few years afterwards, with funds partly, if not wholly, raised by the sale of the estate at Horncastle or Croyland, which had been present at the laying of the first stone; and the abbey, thus restored, increased rapidly in wealth and reputation. At the dissolution, its yearly revenues were estimated at 1217l. 5s. 11d. gross, or 1083l. 13s. 10d. clear. The building of the abbey church is notable; there is a campanile tower at the eastern end of the church. After the dissolution the transepts and choir were pulled down; the nave with its side aisles was left for use as the parish church; but the damage sustained in the civil war led to the closing it and to the north aisle of the nave; and the centre and south aisle were abandoned to decay, in which state they now remain. The architecture of the building varies; part is of Norman, part of Early English, and part of Perpendicular architecture. At the west end of the present church is a massive tower of Perpendicular character; the wood entrance door was a symbol of the nave is one of the most beautiful specimens of rich Early English in the kingdom. The groining of the roof of the present church is very good, and the original windows have been fine ones. There are some antient screen-work and an antique west. The very foundations of the other conventual buildings have been destroyed.

On the west side of the church is the triangular bridge at the confluence of the two streams. There is no record of its present site, but it is clear that the very site of the church was discovered in the house of the Thorney. There is supposed to have been designed as a symbol of the Trinity. At one angle of the bridge is the statue of some king much decayed.

The parish comprehends 12,780 acres, with a population in 1831 of 2268, nearly two-thirds agricultural. The village is surrounded by four churches, the inhabitants are engaged in grazing, in the dairy, or in the breeding or taking of geese and wild-fowl. The market has been removed to Thorney. The living is a rectory, in the archdeaconry of Lincoln, of the clear yearly value of 115l., with a glebe-house. There were, in 1833, in the two parishes, four day-schools, with 122 children; and two Sunday-schools, with 206 children.

Navenby is in the hundred of Boothby Graffoe, parts of Kesteven, on the road from Grantham to Horncastle; 12 ½ miles from London. The church is partly of Early English and partly of Decorated English architecture. The windows of the chancel are very fine specimens of Decorated character, particularly the east window, the mullions and tracery of which are remarkably fine. There are, in 1833, in the archdeaconry of Lincoln, 2110 acres, with a population, in 1831, of 778, above half agricultural. The market, formerly held on Thursday, has fallen into disuse. The living is a rectory, in the archdeaconry of Lincoln, of the clear yearly value of 210l. 13s. 4d. There were, in 1833, in the two parishes, five day-schools, with 18 children; two day-schools, with 25 children; and one endowed day and Sunday school, with 109 children in the week and 166 on Sunday.

Saltfleet is in the hundred of Lowth Eske, parts of Lindsey, 190 miles from London, through Lincoln, Horncastle, and Louth. Saltfleet, half a century ago, was a place of some consequence, but is now decayed and is a mere hamlet to the parish of Skibbrooke. Some of the inhabitants are engaged in the oyster fishery; there is a bank of good oysters in the river near the mouth of Skibbrooke; the town was formerly called Bafgraff; 1240 acres, with a population of 362, about half agricultural. The living is a vicarage, in the archdeaconry of Lincoln, of the clear yearly value of 21l. 13s. 4d. There were in 1833, in the two parishes, two day-schools, with 22 children, and one Sunday-school, with 58 children.

**Divisions for Ecclesiastical and Legal Purposes.**—This county, as noticed above, is in the diocese of Lincoln, and constitutes the two archdeaconries of Lincoln and Stow. The intended changes in the diocese have been also given. The archdeaconry of Lincoln is subdivided into the following rural deaneries:—1, Lincoln; 2, Aswardburn or Aswardburn-cum-Lafford; 3, Aveland; 4, Belisle or Belisle; 5, Bolingbroke or Bullingbrooke; 6, Candlehoe; 7, Calcehoe; 8, Clifton; 9, Cleethorpe; 10, Graffoe; 11, Grimsby Hall; 12, Horncastle; 13, Longbovey; 14, Loveden; 15, Lowth-cum-Ludbrook; 16, Ness, or Nesse; 17, Stamford; 18, Walscote or Walscoft; 19, Wrage or Wragebrooke and 20, York. The archdeaconry of Lincoln is divided into the following rural deaneries:—1, Aslacie or Aslacko; 2, Corringham; 3, Lawreess or Lawrens; 4, Manley or Manlake. The number of parishes is given by Camden at 630. In Lewis's Topographical Dictionary of 1837, they are again given at 380 for rural deaneries, 244 vicarages, and the remainder perpetual curacies, chapels, or donatives. The dioce of Lincoln is in the ecclesiastical province of Canterbury. Lincolnshire is in the midland circuit. The assizes are held at Lincoln, where is also the county gaol. The quarterly sessions are held as follows: for the county of the city of Lincoln, at Lincoln; for the parts of Kesteven and Holland, the Epiphany, Easter, and Midsummer sessions, at Bourn, the Michaelmas sessions, at Boston: for the parts of Lind-
ney, for one division, at Kirton in Lindsey; and for the other division, the Epiphany and Midsummer sessions at Spilsby, and the Easter and Michaelmas sessions at Louth, Lincoln, Gainsborough, Epworth, Barton, Glenfarm Bridge, Market Rasen, Grimsby, Louth, Spilsby, and Horncastle.

By the Reform and Boundary Acts the county was divided into two parts, each to return two members. The northern division comprehends the parts of Lindsey: the northernmost containing stations at Louth, Lincoln, Gainsborough, Epworth, Barton, Glenfarm Bridge, Market Rasen, Grimsby, Louth, Spilsby, and Horncastle. The southern division comprehends the parts of Kesteven and Holland: the election takes place at Sleaford, and the polling at Grantham, Bublborough, Bourn, Donington, Navenby, Spalding, and Grantham.

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

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

Lindum, the modern Lincoln, was a British town before it was made a Roman station. It is at the intersection of the two great roads, the eastern branch of Ermine-street and the Foss. Procopius calls it Alcuin, and mentions it as one of the chief towns of the Coritani. It was made a Roman station, and according to Richard a Roman colony, which is confirmed by the existence of the Colonia. The city was on the hill now occupied by the cathedral and the castle: its form was that of a parallelogram, the sides nearly facing the four cardinal points; on each side was a gate; of which the one was 1200 feet, and the other 800. They have been almost entirely levelled with the ground, and the gates, with one exception, have been long since demolished. The remaining gate, now called 'Newport Gate,' is one of the most remarkable Roman remains in the kingdom. It consists of a central arch nearly sixteen feet wide, and formed with large stones put together apparently without mortar; the height, according to Stukely, was originally above twenty-two feet, but it is now, from the elevation of the causeway, scarcely more than half that height. On each side of the great arch are two lateral arches, now nearly closed up by the elevation of the soil; these small arches were each seven feet and a half wide by fifteen high. Adjacent to this gate is a mass of the Roman wall; a Roman arch and part of the wall are still preserved, and the Norman castle is another portion of wall parallel to that of the station, and now called 'the Mint Wall,' is supposed to have been part of a granary or of some other Roman building. A fortified wall with towers at the corners, which is said to have been born in the midst of the town, and then along the bank; if any part of this remains, it has been so mingled with later Saxon or Norman workmanship, that it cannot be discriminated. Coins of the emperors Nero, Vespasian, and Julian have been found here, and especially of Carausius, who, as some have supposed, resided here for a time at Lincoln. A tessellated pavemen and a hypocaust beneath it were discovered in a.d. 1739; the pavement was thirteen feet below the present surface. Another hypocaust and several antiquities have been also discovered, especially a sarcophagus and some stone coffins, earthen and glass urns, and other funeral utensils. Part of a set of glazed porcelaneous pipes and other specimens of pottery have been also found.

The only other Roman station in the county mentioned in the Antonine Itinerary was Causcanna. Ad Abum, mentioned by Richard de Cirencester, was on Ermine-street, at Winterton, near the same road to the Humber. The Bannewallum and the Vaniomas of the anonymous geographer Ravennae have been fixed at Horncastle and Winterton. Causcanna was probably on Ermine-street, at Winterton, near the same road to the Humber. The remains of the station at Winterton, supposed to be Ad Abum, were ploughed up not more than six years before Stukely wrote the account of it, and 'great pavements, chimney-stones,' and other antiquities were found. Several Roman pavements, of which the foundations were preserved, were found here in A.D. 1747. At Roxby, Hibaldstow, Appleby, Sandton, and Broughton, all in the same part of the county, various Roman antiquities have been discovered. At Horkstow also, near Winterton, several Roman remains, and a tessellated pavement, beneath the foundations of buildings, have been found. At Toksey, at the junction of the Foss Dyke with the Trent, between Lincoln and Gainsborough, there was probably a Roman settlement. The foundations of the ancient Norman castle appear to have been here. At Beaminster, a Roman station, near Lincoln, were discovered in 1795 the foundations of a Roman villa, enclosing a site 200 feet square, and having upwards of forty apartments on the ground plan, with columns supported by a massive wall. The Roman pavements, only one of which was perfect, some of the walls were of great thickness. Various Roman antiquities were found scattered over the spot. Upon the banks of the Trent, three miles west of Stow, in the same part of the county, two half-covered pavements have been discovered. Horsley was inclined to fix the station Segellocum here, on the Lincolnshire side of the stream, instead of placing it at Littleborough on the Nottinghamshire side, where he admits that the town stood. Many ancient foundations are discovered at Sibedocaster of the Saxons, the seat of a bishopric afterwards transferred to Lincoln. Near Gainsborough and at Aukborough, both on the Trent, are Roman camps: the latter was, in Stukely's time, very perfect, and formed by a line of fields, and large portions of covered, formed of banks, called here and elsewhere Julian's bank. Camps, probably Roman, have been found at Gedney Hall, near Holbeach, and at Homington, not far from Grantham; a mole of pavement at Denton, in the same neighbourhood, and many Roman coins and pipes of baked earthware in other places.

Under the Saxons, Lindsey, a name which perhaps extended nearly or quite over the modern county of Lincoln, was probably a part of Mercia. The Saxons had conquered the kingdom of Mercia. It was included among the conquests of Edwin of Northumberland, under whose influence Christianity was introduced by the missionary Paulinus. Boile has recorded that Berca, the governor of Lindsey, was, with his household, among the first converts, at the Synod of Whitby.

When the Danes, or Norsemen, were carrying on their ravages in England in the time of Ethelred I, Lindsey, which then had several monastic establishments, suffered greatly. The narrative of their ravages, given in the pages of the apocryphal Inclusus, is in itself incorrect, and the authenticity could be depended on, would afford considerable light amid the historic darkness of the period. Early in the year 870 the Northmen landed at Humberside (Humberstone), near Grimsby, ravaged Lindsey (Lindsey, a name which is still preserved), and carried away the money put in the temple of St. Botolph, or the smallest monastery, the monks of which they had sacred in the church. About Michaelmas they penetrated into Kesteven, burned and devastated marking their course. Here and there fragments of the Wicerman's gold and silver:—Count Algar (comes Algarius) and two knights (milites) his senechal's (scheneschal's) suit, called Weld and Leofric (from whose names the aged men and the stories of which they have been found the stories of which they have been found the stories of which they have been found the stories of which they have been found the stories of which they have been found)


drew together all the youth of Holland (Holland), with a band (colors) of two hundred men from the monastery of Croyland, stout warriors, inasmuch as most of them were exiles (fugitives), who were commanded by brother Ethel
Lincolnshire, where Robert Askew took the command of the insurgents. The Lincolnshire rebels sent in petitions to the king, specifying what they deemed their grievances; and the king gave an answer (State Papers, *Henry VIII.,* part ii., No. xlviii.), in which he designates the shire 'one of the most noble and powerful of the whole realm.' The earls of Shrewsbury, Rutland, and Huntingdon, and the duke of Suffolk, were sent into Lincolnshire with all the force that could be collected; and the rebels dispersed without coming to an engagement, delivering up their leaders to the King's officers. Dr. Makere, with the viceroy of Louth and thirteen others, were afterwards executed at Tyburn.

Of the ecclesiastical and baronial edifices which were erected between the Conquest and the Reformation, Lincolnshire contains a number of admirable churches. The cathedral of Lincoln and the churches of Louth, Sleaford, Spalding, and other places, have been already noticed. On the hill which runs from Lincoln towards Grantham is a line of churches, presenting a particularly fine appearance. The church of St. Wulfram, and Anceaster have considerable portions of Norman character. Caythorpe church is chiefly of Decorated English character, and presents several singularities in its arrangement. Leadenham has a tower and spire of Early Perpendicular character. They are often considered as an excellent example of Decorated English. The churches on and near the road from London to Lincoln exhibit as much, if not more variety and excellence of composition than it is to be met with in any part of the kingdom in the same distance. At Boston, near Bourne, and Market Deeping churches. Kelby, Thringham, Kirby Laythorpe, Hovel, Horbling, Sempringham, and Morton have portions of Norman character. Sempringham church appears to have been built on the plan of a much larger building; it has a tower of plain Perpendicular character. Silk Willoughby church is of fine Decorated English character, with a tower and spire of good composition. Walcote has a tower and fine crocketed spires, which are of Decorated character. Both Lincoln and Sleaford are clothed in green spires, and the west window is very fine. Heckington church is one of the most beautiful models of a church in the kingdom, having almost every feature of a fine church. It is a large cross church, having a nave and aisles, spacious transepts, a larger chancel with a walk attached to the north side, and at the west end a tower crowned with four pinnacles and a lofty spire.

The finest churches in the Fens are for the most part of Perpendicular character; they have lofty spires, some of them with pinnacles, and others with crockets. Those in Kesteven and Holland; those of Lindsey are of inferior architecture, except in the flat marshy tract between the Wolds and the Ouse or the Humber, where there are some fine ones. The churches in this district vary but little. At Cogglesford, a church of early Decorated, north and south aisles, a chancel, south porch, and western tower, are commonly built with good materials. The churches amid the Wolds have little claim to architectural beauty. In the western parts of Lindsey some of the churches are of great antiquity and of contemporary beauty. Stow church, in this part, is of considerable size, and chiefly of Norman character.

Of monastic edifices there are several remains. Of Barton Abbey and some of the monastic columns remain. Of Thornton Abbey, not far from Barton-upon-Humber, the remains are more important and interesting. It was founded by William Le Gros, or Le Gros, earl of Albemarle, A.D. 1189, as a priory for Black Canons, and is called 'Barton.' It has long since ceased to be a monastery, having been sold in the time of Elizabeth and the reign of James I.; and the lower part is now occupied as a farm-house.
Of Bardney Abbey there are some remains, also of Kirkstead Abbey; both these are on the left bank of the Witham, between Lincoln and Boston. The abbot's lodge of Revesby Abbey, on the north border of the fen country, formed part of an ancient house, since used for the offices of the mansion of the late Sir Joseph Banks. Crowland has been described before.

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

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

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

### Statistics.

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

The following summary of the population taken at the last census (1831) shows the number of inhabitants and their occupations in each hundred of the county.

The following Table is a Summary of the Population, &c., of every Hundred, &c., as taken in 1831.

```
<table>
<thead>
<tr>
<th>Hundred</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barton</td>
<td>274</td>
</tr>
<tr>
<td>Skirbeck</td>
<td>503</td>
</tr>
<tr>
<td>Holderness</td>
<td>575</td>
</tr>
<tr>
<td>Boston</td>
<td>477</td>
</tr>
<tr>
<td>Holderness</td>
<td>331</td>
</tr>
<tr>
<td>Barton</td>
<td>313</td>
</tr>
<tr>
<td>Skirbeck</td>
<td>679</td>
</tr>
<tr>
<td>Holderness</td>
<td>484</td>
</tr>
<tr>
<td>Boston</td>
<td>113</td>
</tr>
<tr>
<td>Holderness</td>
<td>96</td>
</tr>
<tr>
<td>Barton</td>
<td>51</td>
</tr>
<tr>
<td>Skirbeck</td>
<td>67</td>
</tr>
<tr>
<td>Holderness</td>
<td>14</td>
</tr>
<tr>
<td>Boston</td>
<td>61</td>
</tr>
<tr>
<td>Holderness</td>
<td>63</td>
</tr>
<tr>
<td>Barton</td>
<td>538</td>
</tr>
</tbody>
</table>
```
The population of Lincolnshire at each of the four following dates was as under—

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>Increase per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1811</td>
<td>106,364</td>
<td>100,869</td>
<td>207,233</td>
<td>17.0</td>
</tr>
<tr>
<td>1831</td>
<td>143,300</td>
<td>141,946</td>
<td>285,246</td>
<td>29.5</td>
</tr>
<tr>
<td>1851</td>
<td>160,664</td>
<td>157,058</td>
<td>317,722</td>
<td>34.3</td>
</tr>
</tbody>
</table>

showing an increase between the first and last periods of 18,388, or about 23 per cent, which is 4½ per cent, below the whole rate of increase throughout England.

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>Amount</th>
<th>d.</th>
<th>d.</th>
<th>d.</th>
<th>d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1811</td>
<td>1821.45</td>
<td>105</td>
<td>112</td>
<td>208</td>
<td>537</td>
</tr>
<tr>
<td>1821</td>
<td>117,022</td>
<td>120</td>
<td>869</td>
<td>237,891</td>
<td>146</td>
</tr>
<tr>
<td>1831</td>
<td>141,970</td>
<td>141</td>
<td>486</td>
<td>283,458</td>
<td>197</td>
</tr>
</tbody>
</table>

For the same purpose in the year ending March, 1837, was £141,486. If we assume that the population has increased since 1831 in the same ratio as in the ten preceding years, the above sum gives an average of about 16s. 6d. for each inhabitant. All these averages are above those for the whole of England and Wales, and those for the poor-rate.

The sum raised in Lincolnshire for poor-rate, county-rate, and other local purposes, in the year ending 31st March, 1833, was £225,003, and was levied upon the various descriptions of property as follows:

<table>
<thead>
<tr>
<th>Source of Revenue</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>On land</td>
<td>£188,927</td>
</tr>
<tr>
<td>Dwelling-houses</td>
<td>30,760</td>
</tr>
<tr>
<td>Mills, factories, &amp;c.</td>
<td>3,533</td>
</tr>
<tr>
<td>Manorial profits, navigation, &amp;c.</td>
<td>1,961</td>
</tr>
</tbody>
</table>

Total | £225,003 |

The amount expended was:

<table>
<thead>
<tr>
<th>Source of Expenditure</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the relief of the poor</td>
<td>£169,073</td>
</tr>
<tr>
<td>In suits of law, removal of paupers, &amp;c.</td>
<td>6,750</td>
</tr>
<tr>
<td>For other purposes</td>
<td>49,073</td>
</tr>
</tbody>
</table>

Total | £235,896 |

In the returns made up for the subsequent years the descriptions of property assessed are not specified. In the year ending March, 1834, there was raised £228,236; 1835, 267,347; 1836, 186,264; 1837, 133,767; and the expenditure for each year was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1834</td>
<td>£28,449</td>
<td>£2,269</td>
</tr>
<tr>
<td>1835</td>
<td>3,745</td>
<td>1,019</td>
</tr>
<tr>
<td>1836</td>
<td>7,249</td>
<td>1,019</td>
</tr>
</tbody>
</table>

Total | £35,797 |

The saving effected in the expenditure of the poor in 1837, as compared with the sum expended in 1834, was therefore about 13 per cent.; and the saving effected, comparing the same periods of time, in the whole sum expended, was about 2½ per cent.

The number of turnpike trusts in Lincolnshire, as ascertainment, in 1833, is 39; the number of miles of road under their charge is 538. The annual income and expenditure in 1834 were as follows:

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue from tolls</td>
<td>£28,449</td>
</tr>
<tr>
<td>Parish composition in lieu of statute duty</td>
<td>2,269</td>
</tr>
<tr>
<td>Estimated value of statute duty per forming</td>
<td>3,745</td>
</tr>
<tr>
<td>Revenue from fines</td>
<td>4,629</td>
</tr>
<tr>
<td>Revenue from incidental receipts</td>
<td>1,019</td>
</tr>
<tr>
<td>Amount of money borrowed on the security of the tolls</td>
<td>1,019</td>
</tr>
</tbody>
</table>

Total | £35,797 |

The number of persons charged with criminal offences in the three septennial periods ending with 1820, 1827, and 1834, were 1,296, 1,563, and 2,237 respectively; making an average of annually 185 in the first period, of 225 in the second period, and of 319 in the third period. The number of persons tried at quarter-sessions in each of the years 1831, 1832, and 1833, in respect of whom any costs were paid out of the county-rate, was 197, 210, and 244 respectively.

Among the persons charged with offences there were committed for

<table>
<thead>
<tr>
<th>Offence</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felonies</td>
<td>161</td>
</tr>
<tr>
<td>Misdemeanors</td>
<td>36</td>
</tr>
</tbody>
</table>

The total number of committals in each of the same years was 229, 245, and 201 respectively.

At the assizes and sessions in 1837 there were 412 persons charged with criminal offences in this county. Of these 23 were charged with offences committed in the year 1837, 13 of which were for common assaults; 29 persons were charged with offences against property committed with violence; 325 with offences against property committed without violence; 1 for destroying trees; 1 for uttering counterfeit coin; 16 for riot; 4 for poaching; 1 for perjury; and 2 for minor misdemeanors. Of the whole number committed, 291 were convoluted, 83 were acquitted, and against 38 there were no bills found, or no prosecution. Of the whole number of persons convicted, 12 were sentenced to death, but none were executed; the sentences of 9 of them were commuted into transportation for life; of 2 others for periods of 15 and of 7 years; and of 1 into imprisonment for 1 year, or more than 6 months: 13 criminals were sentenced to transportation for life; and 41 for various periods; 9 were sentenced to imprisonment for 2 years, or more than 1; 32 for 1 year or more than 6 months; and 169 for 6 months or under; 12 were sentenced to be whipped or fined, or were discharged on informations. Of the whole number of offenders, 345 were males and 67 were females; 136 could not read nor write; 232 could read and write imperfectly; 37 could read and write well; 2 had received superior instruction, and the degree of instruction of the remaining 5 could not be ascertained.

The number of persons qualified to vote for the county members of Lincolnshire is 18,241, being 1 in 17 of the whole population, and 1 in 4 of the male population twenty years and upwards, as taken in 1831. The expenses of the last election of county members were, to
<table>
<thead>
<tr>
<th>Description of Schools</th>
<th>Males</th>
<th>Females</th>
<th>Sex not specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant schools</td>
<td>71</td>
<td>48</td>
<td>14</td>
</tr>
<tr>
<td>Daily schools</td>
<td>1,344</td>
<td>797</td>
<td>371</td>
</tr>
<tr>
<td>Sunday schools</td>
<td>543</td>
<td>339</td>
<td>191</td>
</tr>
<tr>
<td>Total number of children</td>
<td>2,648</td>
<td>1,645</td>
<td>604</td>
</tr>
</tbody>
</table>

Assuming that the population between two and fifteen years increased in the same ratio as the whole of the population between 1821 and 1831, and has continued to increase in the same ratio since, we find that must have been living in Lincolnshire (in 1834) 105,556 persons between those ages. A very large number of the scholars attended both daily and Sunday schools. Forty-five Sunday schools are returned from places where no other schools exist, and the children, 1,221 in number, who are instructed therein cannot be supposed to attend any other school. At all other places Sunday-school children have an opportunity of resorting to other schools also; but in what number, or in what proportion duplicate entry of the same children is thus produced must remain uncertain. Forty-three schools, containing 26,866 children, which are both daily and Sunday schools, are returned from various places, and duplicate entry is therefore known to have been thus far created. Making allowance for this cause for over-statement, we may perhaps fairly conclude that not as many as two-thirds of the whole number of children between the ages of 2 and 15, were receiving instruction at the time this return was made.

**Maintenance of Schools.**

<table>
<thead>
<tr>
<th>By endowments</th>
<th>By subscriptions</th>
<th>By parochial funds</th>
<th>By contributions from religious and philanthropic societies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant schools</td>
<td>17</td>
<td>97</td>
<td>681</td>
</tr>
<tr>
<td>Daily schools</td>
<td>12</td>
<td>76</td>
<td>15</td>
</tr>
<tr>
<td>Sunday schools</td>
<td>12</td>
<td>76</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>170</td>
<td>479</td>
<td>1,199</td>
</tr>
</tbody>
</table>

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

**Schools.**

<table>
<thead>
<tr>
<th>Infant schools</th>
<th>Daily schools</th>
<th>Sunday schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>706</td>
<td>13</td>
<td>411</td>
</tr>
</tbody>
</table>

The schools established since 1818 are—

<table>
<thead>
<tr>
<th>Infant and other daily schools</th>
<th>614</th>
</tr>
</thead>
</table>

Twenty-five boarding-schools are included in the number of daily schools as given above. No school in this county appears to be confined to the children of parents of the Established church, or of any other religious denomination. Each school, therefore, being described for ever more the school, especially in schools established by Dissenters, with whom they are here included Wesleyan Methodists, together with schools for children of Roman Catholic parents. Lending libraries of books are attached to 34 schools in this county. Although the Capitalities of year have been increased.

**LINE.**

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

**LINE.**

The French used to divide their inch into twelve lines; and very lining to twelve points, which measures are out of date, since in all scientific investigations the metric system is adopted. Sometimes, but rarely, the line has been divided into ten points, thus giving 150 points to the French metrological writers, particularly the older one, most frequently give the measure of a line in 1440ths of their own foot. Some English writers have divided the inch into lines. The French line is "on an English inch, and is also two millimetres and a quarter.

**LINEAR DIMENSIONS.**

**SOLID, SUPERFICIAL, AND LINEAR DIMENSIONS.**

**LINEN.**

**Tissue de Lin;** Spanish, Tela de Lin; German, Linnen; Dutch, Lijnen; Italian, Tela; Russian, Polotno; cloth woven with the fibres of the flax plant (Linum usitatissimum), a manufacture of so antient a date that its origin is unknown. Linen cloths were made at very early period in Egypt, as we see from the older tombs of the mummies, which are all linen. It appears also that linen was, in the time of Herodotus, an article of export from Egypt. (li. 102.)

Until a very recent time little machinery was used in the production of linen cloth. After the separation of the ligneous fibres of the plant [Flax], the distaff and common spinning-wheel were employed for the preparation of the thread or yarn, and the hand-loom generally, the simplest form, was employed for this purpose. Within the present century the first attempts were made at Leeds to adapt the inventions of Hargreaves and Arkwright to the spinning of flax—attention which cannot be said to have been generally successful until the last few years. But since the early part of the 19th century, the manufacture has been adopted for weaving all the very finest and most costly fabrics. The consequences of these improvements have been to render this country independent of all others for the supply of linen yarn of every quality, and to diminish the manufacture of the important Linen tweeds and woollen stuffs. So that British cloths and cottons are now profitably exported to countries with which the manufacturers of Great Britain and Ireland were formerly unable to compete, and against which they were 'protected' in the home market by high duties on importation.

The growth of the linen manufacture in Ireland is ascribed to the legislative obstruction raised in the reign of William III. to the prosecution in that part of the kingdom of the woolen manufacture, which was included in the same prejudicially with the other manufactures of England. In 1689, men weavers being at the same time encouraged by premiums of various kinds distributed by public boards, were by parliament, and by bounties paid on the exportation of linen to foreign countries. We have no certain means for ascertaining the growth of...
LIN

19

the linen manufacture in Ireland. The only facts by which we can approximate to its amount are afforded by custom-house records, which do not reach back to an early date, and are wanting for the years subsequent to 1825, when the intercourse between Great Britain and Ireland was put upon a footing of a commercial nature. The salaries of two or three junior clerks, no further record was attempted to be made of its amount or direction. The average quantity of linen exported annually from Ireland, principally to England, in the three years to March, 1790, was 34,191,754 yards. In the three years ending March, 1800, the yearly average was 36,112,369 yards, and the average annual exports in the last three years of each of the next two decennial periods was 40,731,899 yards and 48,265,711 yards respectively. In the six years 1820 to 1825 the quantity sent from Ireland to Great Britain was—

1820 42,665,928 yards.
1821 45,518,719
1822 43,232,710
1823 48,068,591
1824 46,466,950
1825 52,560,926

An attempt was lately made by the commissioners appointed to consider and report concerning railway communications in Ireland to ascertain the extent of the exports, and they have stated, as the result of their inquiries, that in 1835 there were shipped from Ireland 70,399,572 yards of linen, the value of which was £7,730,834.

The linen manufacture was introduced into Scotland early in the last century. In 1727 a board of trustees was appointed for its superintendence and encouragement. Notwithstanding this and the further stimulus afforded by premiums and bounties, the progress of the manufacture in that part of the kingdom was for a long time comparatively insignificant. At the end of the great state of the Scotch trade, it is stated that the whole quantity of flax imported in 1741 was only 74 tons, and the quantity of linen sent away did not exceed 1,000,000 yards. In less than half a century after this the annual importation of flax was 2500 tons, and there were exported 8,000,000 yards of linen, more than the quantity used at home. At this rate the manufacture continued nearly stationary until after the peace in 1815, when a new impetus was given to it; and in 1837 there were imported 32,740 tons of flax, besides 3409 tons of hemp, and there were exported from that place 641,936 pieces of different qualities of linen, sail-cloth, and bagging, besides a quantity, computed to be as great, retained for home use.

Preferences allowed on the shipment of linens were graduated according to their quality and value, and ranged from halfpenny to a penny halfpenny per yard. In 1825 the rates were diminished one-tenth by an act then passed, and an equal proportion was to have been taken off in each of the two following years. This act was altered in 1831: but by the sect 9 Geo. IV., c. 76 (July, 1828), when one-half the bounties had been removed, this course was modified by continuing for three years the rates of allowance payable in 1829, and thereafter repealing the bounty altogether; so that the payments ceased on the 5th January, 1832. Judging from the extent of our exports before and since the diminution and repeal of the bounties, it does not appear that the manufacture has thence experienced any disadvantage, while the country has saved from 400,000l. per annum, formerly paid to enable foreigners to purchase our linen at prices below the expense of production.

The quality of linen yarn is denoted by numbers describing the number of leas (a measure of 300 yards) contained in the yard. Each No. 60th yarn made from 60 leas, or 18,000 yards, the present price of which is 5s. 4d. per lb. The following table exhibits the length and value at present (December, 1838) per lb. of yarn of various qualities:

<table>
<thead>
<tr>
<th>Yards per lb.</th>
<th>Value per lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 5</td>
<td>1,500</td>
</tr>
<tr>
<td>No. 6</td>
<td>13,500</td>
</tr>
<tr>
<td>No. 7</td>
<td>15,000</td>
</tr>
<tr>
<td>No. 8</td>
<td>16,000</td>
</tr>
<tr>
<td>No. 9</td>
<td>18,000</td>
</tr>
<tr>
<td>No. 10</td>
<td>20,000</td>
</tr>
<tr>
<td>No. 11</td>
<td>22,000</td>
</tr>
<tr>
<td>No. 12</td>
<td>24,000</td>
</tr>
<tr>
<td>No. 13</td>
<td>26,000</td>
</tr>
<tr>
<td>No. 14</td>
<td>28,000</td>
</tr>
<tr>
<td>No. 15</td>
<td>30,000</td>
</tr>
<tr>
<td>No. 16</td>
<td>32,000</td>
</tr>
</tbody>
</table>

LINEN YARN

Linen yarn is seldom spun of greater fineness than No. 200, which is fitted for making cambric of good quality. The production of mill-spun yarn was for a long time confined to Yorkshire, but is now extended to Dorsetshire, Lancashire, Somersetshire, and Scotland; and recently nineteen mills for the purpose have been erected in and near Belfast in Ireland. The improvements realized in this branch of the manufacture will be sufficiently indicated by the fact that the average fineness of mill-spun yarn made in 1814 was 11 1 less (3350 yards) per lb., and in 1835 had reached 37 1 less (11,130 yards) per lb., while the cost had diminished in the proportion of 63 per cent. More recent improvements have carried the average degree of fineness to a much higher point, and have still further economized the cost of manufacture. To show the effect which these improvements in the spinning process have had upon finished cloths, it may be mentioned that the price of No. 37 canvas, the quality and dimensions of which are always the same, which in 1814 was 30s. per piece, had fallen in 1855 to 18s.

The number of flax factories at work in different parts of the kingdom, according to returns made by the inspectors of factories in 1835, was 347, of which 152 were in England, 170 in Scotland, and 25 in Ireland. The number and ages of the persons employed in these mills were—

<table>
<thead>
<tr>
<th>Between 8 and 12 Years</th>
<th>12 Years and Over</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>Females</td>
<td>Males</td>
</tr>
<tr>
<td>England</td>
<td>497</td>
<td>434</td>
</tr>
<tr>
<td>Scotland</td>
<td>104</td>
<td>175</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Linen, Yarn, &amp;c.</th>
<th>Declared Value</th>
<th>Exported to the United States of America</th>
</tr>
</thead>
<tbody>
<tr>
<td>1828</td>
<td>60,327,814</td>
<td>2,120,375</td>
</tr>
<tr>
<td>1829</td>
<td>61,998,938</td>
<td>2,063,697</td>
</tr>
<tr>
<td>1830</td>
<td>61,919,946</td>
<td>2,065,453</td>
</tr>
<tr>
<td>1831</td>
<td>69,125,892</td>
<td>2,124,799</td>
</tr>
<tr>
<td>1832</td>
<td>63,828,569</td>
<td>2,169,379</td>
</tr>
<tr>
<td>1833</td>
<td>61,845,346</td>
<td>2,105,468</td>
</tr>
<tr>
<td>1834</td>
<td>71,777,099</td>
<td>2,169,774</td>
</tr>
<tr>
<td>1835</td>
<td>62,969,762</td>
<td>2,169,774</td>
</tr>
<tr>
<td>1836</td>
<td>86,140,366</td>
<td>2,922,100</td>
</tr>
</tbody>
</table>

It will be seen from the last column in the following table that the fluctuations experienced in the amount of our exports have been occasioned by interruptions that have occurred in our trade with the States of America. Next in importance to the quantity taken by those States are the exports made to our own American and West India colonies, the foreign West Indies, and Brazil. Our shipments of linen and linen-yarn to different European countries are still of comparatively little moment, if we except the exports made within the last few years to France, and which are almost wholly the consequence of improvements in our spinning and weaving processes. The total value of these exports in 1838 amounted to no more than 7,529, the greater part of which consisted of linen; whereas in 1837 that country took from us 3,368,386 yards of linen, and 7,010,983 lbs. of yarn, valued together at 543,819.

LINEN, in Music, are the five parallel lines forming, together with the intermediate spaces, the staff in which musical notes and other characters are placed. [STAFF; LIGATURE.

LINENS, in Intrenchment. In the article ENCAMPMENT it has been stated that armies in the field are not now, as formerly, surrounded by fortifications consisting of a continuous line of breastworks, but are for the most part intrenched in a general form of open work, with earthworks, such as trenches, ditches, &c., to defend the notes and other characters placed. [STAFF; LIGATURE.

LINENS, in Intrenchment. In the article ENCAMPMENT it has been stated that armies in the field are not now, as formerly, surrounded by fortifications consisting of a continuous line of breastworks, but are for the most part intrenched in a general form of open work, with earthworks, such as trenches, ditches, &c., to defend
In the first place it may be said that a continuous breast-work would be advantageous for the protection of a frontier, when the absence of natural obstacles might favour the enemy's marauding parties in making descents for the purpose of levying contributions or laying waste the country; and here a parapet A B, broken by the redans C, C, from whence the defenders might annoy the enemy in flank, on his approach, would suffice. The distances of the redans from one another may be about 150 yards, or not exceeding the range of musket-shot: and such was the construction recommended by Vauban, which, since his time, has been modified by giving to the curtains the form indicated by the lines a, b, c, in order that they might be more effectually defended from the faces of the redans. These faces should be so disposed that, if produced to an extent equal to the range of artillery, the lines of direction might fall on

work where the enemy could not establish batteries for the purpose of enfilading them; since, in the event of such enfilading taking place, the defenders would be compelled to abandon the parapets; artillery, if placed there, would be dismounted; the palisades in the ditch would be destroyed; and thus little resistance could be made, should the enemy subsequently assault the line. In general the redans may have the form of equilateral triangles, and the lengths of their sides may be about 50 yards. The entrances are usually in the middle of the curtains.

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

Again, when the nature of the ground does not permit the intrenchment to be formed with points so far advanced as the vertices of the redans C, C; when, for example, it is required to form a bank and a parapet of red earth, it is proposed, in preference to a simple straight or curved line, to form the parapet with a series of branches in the positions indicated by a, b, c, d, &c., to P. A line of this kind is said to

works are capable of being easily adapted to any kind of ground; for it is merely necessary to place them on the more elevated spots in such situations that the enemy may not be able to penetrate between them without being exposed to their fire.

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

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

The elevation of the crest A above the natural ground is about 7 feet; unless the vicinity of a commanding height in front should render a greater relief necessary, and the depth of the ditch be increased. The thickness of the work on the upper part of the parapet is variable, and depends upon the importance of the work, or rather, upon the arm which
may be employed in the attack: if it were required only to
rest a fire of musketry, 3 feet would suffice; but from 8
feet to 12 feet would be necessary in the event of artillery
being brought against it. (Twelve-pounder shot is the heaviest
which the French have ever yet employed in the field.)
The form of the parapet is the same as in permanent fortifica-
tion; when time permits, the exterior and interior slopes
should be revolved with sods, and a line of palisades should
be placed along the parapet, to the point of the bastion or
the lowest part of the work.

LINGUELLA. [Infest infrastructrata, vol. xii.]

LINGUULA. [Branchiopoda, vol. v, p. 313.] Dr. Fitzton,
in his Stratigraphical Table of Fossils in the strata below the
chalk, records three species (one indistinctly) from the lower
greysand : two Sci. Foraminifera, and Dr. Cowley, the
Ile of Wight (1836). Mr. Murchison describes and
figures several fossil species; one from the old red sand-
stone, one from the upper Ludlow rock, one from the
Amesbury limestone, one from the lower Ludlow rock, one from the Weslack
shale, and one from the Llandeilo flags. ([Silurian Sys-
tem, 1839.]

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

LINGKLA. Nardo has proposed this name for a group
of Stelleridea included in Asterias by Lamarck. (Agassiz, on
Echinodermata, 'Ann. of Nat. Hist.,' vol. i.)

LINKOPING. [Sweden.]

LINLEY, THOMAS, a composer who ranks high in
work. It was early, when the wonderful powers of his mind
and musical taste were never obscured by the obscurity of the latter
place, where he had sought a refuge as a master, and
embraced the concerts in that place, then the resort of
to the fashionable world during a part of every year. To
the exertions of these, his two daughters, Eliza and Mary,
and of his son-in-law Mr. Sheridan, united with Mr. Stanley,
the blind composer, in continuing those performances; and on
the death of the latter, Dr. Arnold joined Linley in the
same, undertaking by no means unprofitable in its results.
He and Mrs. Sheridan then formed The Duenna, which had a run unparalleled in dramatic annals; it
was performed seventy-five times during that season. This led to his entering into a treaty to purchase Mr.
Garrick's money of Drury-lane theatre; and in 1776 he,
embracing the fair and agreeable situation of the Two
Bridges, for which they paid 20,000l. Dr. Ford taking the
other three-fourths, and the chief management was entrusted
to Sheridan, while to Linley was assigned the direction of the
theatrical department. He then devoted his life to the
publication of his Carmina of Venice; Setima and Azor, from the French; and The
Camp, Sheridan's second production. He also added those
charming accompaniments to the airs in The Beggar's Opera, which are still in use, and it is to be hoped will
not be yet 

Linthgow, or West LOTHIAN, is a small
county of Scotland, bounded on the north by the Firth of
Forth, on the west, south-west, and north-west by the shires
of Stirling and Lanark, and on the south and south-east by
the counties of Berwick and Ayr. It is bounded on the
west by the Rivers Breich and Amond. Its greatest length, from the mouth
of the Amond to the borders of Stirling and Lanarkshire, is nearly 21 miles; and its greatest breadth, from the north
and west, is about 14 miles, the county extending into the
village of Linlithgow, on the south and west, somewhat in the closest inlets; it is
comprised between SW: 51 and 50° 1' N. lat., and 3° 17' and 3° 50' W. long. In 1794 Mr. Trotter estimated the area of the county and the
distribution of the soil as under:—

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good clay lands</td>
<td>14,000</td>
</tr>
<tr>
<td>Loam</td>
<td>7,000</td>
</tr>
<tr>
<td>Light gravel and sand</td>
<td>7,000</td>
</tr>
<tr>
<td>Clay, cold, wet and hard bottom</td>
<td>18,000</td>
</tr>
<tr>
<td>High rocky land</td>
<td>12,000</td>
</tr>
<tr>
<td>Moss</td>
<td>1,000</td>
</tr>
</tbody>
</table>

57,000

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

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

Linlithgow is an old Galloway town, and a royal burgh of considerable antiquity, is sixteen miles west by north from Edinburgh.

The earliest charter upon record is that of Robert II., dated 23rd October, 1389. To this succeeded the charters of James II. (1451-4), James III. (1462), and James IV. (1536), which were confirmed by Charles I. (11 July, 1639), whereby various privileges were conferred upon the town. The magistracy is composed of a provost, 4 bailies, dean of guild and treasurer, who are elected from the 27 common-councillors, in conformity with a Will IV. c. 76. The debt of the burgh is considerable, though less than in former years. In 1692 the magistrates reported that they owed 18,435L. Scots, or about 1320L. sterling; but in 1833 it had increased to 8141L. sterling.

The revenue, derived principally from landed property and town-dues, amounted in the last assessed year to 712L., which was exceeded by the expenditure.

The town is paved, well lighted with gas, and tolerably clean. It is likewise well supplied with water, but not protected by an efficient police. The population in 1831 was 4874.

The burg was said to be sily conducted. The two teachers are appointed by the town-council, after undergoing an examination by the professor of Latin or the rector of the high school of Edinburgh. Linlithgow unites with Lanark, Peebles, and Selkirk, in returning one member to Parliament. Linlithgow was the seat of Linlithgow, which, after being a royal residence for several centuries, was accidentally set on fire in the year 1746, and is now a magnificent ruin. In the palace chapel is still shown the site where an apparition is said to have appeared to James IV. of the impending issue of the battle of Flodden.

Borrowstounness is an incorporated seaport-town, 17 miles west by north from Edinburgh. Here are extensive salt-marshes, the produce of which is supposed to exceed 36,000 bales of salt yearly. There are seven salt pans. The brine is carried on, and some trade with the Baltic in tallow, hemp, &c.; but during the season a considerable portion of the inhabitants are engaged in the herring-fishery. The harbour is considered safe and commodious, and, with a view to the improvement of this town, an act was passed in 1823, whereby an impost of 2L. Scots is levied on every Scotch pint of ale or beer brought into the town. The depth of water in spring-tides is about 15 feet. The revenue, consisting principally of harbour-dues, amounted in 1856 to 9672L., and was insufficient to meet the various defray of keeping the harbour and town in repair, and paying the interest of a debt which had then accumulated to 2930L. The population in 1831 was 2869.

(Lindesey, General View of the Description of West Linlithgow 4to. 1794; McCulloch, Statistical Account of the British Empire; Local Reports from Commissioners on Scotch Corporations, 1833-35; Beauties of Scotland; Sinclair’s Statistical Account of Scotland.)

LINNEUS, or VON LINNE, C.A. was born at Råshult, in the province of Strömsö in Sweden, May 3, 1707 (O.S.). His father, Nicholas Linneus, was an assistant clergyman of a small village called Stendrohult, of which Råshult was a hamlet, and is related to have resided in a delightful spot, on the banks of a fine lake, surrounded by his father’s lands. A tradition, and what is believed to be the earliest history of the family, is that Linneus was a shepherd, and that he learned to have had little taste for remembering names, and his father found it no easy matter to overcome this inaptitude; he however at last succeeded, and the consequence was that he was appointed to be a teacher of the village school. Whether in the next stages of learning Linneus was ill-managed as he himself thought, or whether the nature of his education at home had rendered him indisposed for drier and severer studies, it is certain that his preceptors found great cause to complain of him, and pronounced him, at the age of nineteen, if not a positive blockhead, at all events until...
journey into Lapland. On horseback and on foot he accomplished his object by the 10th of October following, when he returned to Upsal, after travelling, alone and slenderly provided, over nearly 4000 miles. The result of this expedition has been given in his excellent 'Flora Lapponica,' and he to the Swedish account of his tour, of which an English translation was published in 1737. But for some time after his return we find him occupied in teaching mineralogy, particularly the art of assaying, persecuted by the miserable jealousy of a certain Dr. Rosen, on whom it is said to have drawn his anger, and in travelling in Dalmatia at the expense of the government. At the end of 1733 he had scraped together 15£, with which he set out upon his travels in search of some university where he could obtain the degree of doctor in medicine the cheapest, and which was able to publish his physiology for a livelihood. At Harderwijk, in Holland, he secured the opportunity, purpose, June 23, 1733, on which occasion he defended the hypothesis that 'intermittent fevers are owing to fine particles of clay taken in with the food, and lodged in the termination of the blood vessels.'

In Holland Linnaeus formed a friendship with Dr. John Burmann, professor of botany at Amsterdam, and it was during his stay of some months with that botanist that he printed his 'Fundamenta Botanica,' a small octavo of six pages which, although very simple in style and language, was diligently taken into the house of the Dutch banker, possessing a fine garden and library at a place called Hartecamp. This gentleman embraced the opportunity of putting it under the charge of his family; and he was enabled to hold the book for the end of 1737, during which time he is said to have been treated with princely munificence by his new patron. His scientific occupations consisted in putting in order the objects of natural history contained in Mr. Clifford's museum, and which had been formed by himself from plants and herbarium, in passing through the press the 'Flora Lapponica,' 'Genera Plantarum,' 'Critica Botanica,' and some other works, and in the publication of the 'Hortus Cliffortianus,' a fine book in folio, full of the learning of the day, ornamented with good plates by Mr. Clifford, who gave it away to his friends. Some idea may be formed of the energy and industry of Linnaeus, and of his very intimate acquaintance with botany at this period of his life, by the fact that the book just mentioned, consisting to a great extent of synonyms, all the references to which had to be verified, was prepared at the rate of four sheets a week, a prodigious effort considering the nature of the work, which Linnaeus might well call 'res ponderosa.' He however succeeded in this as the expectation of his master was beyond those of ordinary men; and to have worked day and night at his favourite pursuits. In May, 1737, he speaks of his occupations as consisting of keeping two works going at Amsterdam, one of which was the 'Hortus Cliffortianus,' already in preparation; the daily engagement of arranging the garden, describing plants, and superintending the artists employed in making drawings, which alone he calls 'labor inaneus et inexhaustus.' (Van Hall, p. 12.) Linnaeus however seems to have been weak of life he led at Hartecamp, and towards the end of 1737 he quitted Mr. Clifford under the plea of ill health, and an unwillingness to expose himself again to the autumnal air of Holland.

He however was not only eager to do the public good, but he also readily quit the country before the winter of 1738-9 in fact he was evidently tired of his drudgery; good Mr. Clifford would scarcely allow him to leave the house, where Linnaeus complains of being 'incarceratus monachi instar et in conubialibus unius,' during his term of engagement at Hartecamp that he visited England, where he seems to have been disappointed both at his reception and the collections of natural history which he found there. He was ill received by Dillenius, at that time professor of botany at Oxford, who was the principal in England on which the celebrated collection of plants formed by Sherrard at Ettling was being unrivalled in European species, but of little moment in exotics; he found the Oxford garden in a like condition, with the greenhouses and stoves empty; and the great collection of Sir Hans Sloane in a state of deplorable confusion and neglect. Dr. Shaw,
the traveller in the Levant, seems to have pleased him most, and he, together with Philip Miller, the celebrated gardener to the Society of Apothecaries, Mr. Peter Collinson, and Professor Martyr the elder, were apparently the only acquaintances Linnaeus succeeded in forming. By this means he acquired a considerable addition to his collections of plants and books. With Holland he also induced Professor Burman, in conjunction with five printers, to undertake the publication of Rumphius's important 'Herbarium Amboinense,' at an estimated cost of 30,000 ducats.

Linnaeus returned to Sweden he commenced practice in Stockholm as a physician, and with the aid of a pension of 200 ducats from the government, on condition of lecturing publicly in botany and mineralogy, his prospects for the future became satisfactory to him to enable him to marry Magdalena Maes. In 1739, he occupied a small botanical farm that he had purchased near the town of Upsal, where a monument of Swedish porphyry was erected by his pupils. His obsessions were performed in the most respectful manner by the whole university, the pall being supported by sixteen doctors of physic, and all of the best physicians in the city of Upsal. A generally acknowledged custom took place on the occasion at Upsal, and King Gustavus III. not only caused a medal to be struck expressive of the public loss, but introduced the subject into a speech from the throne, regarding the death of Linnaeus as a national calamity. He had already adverted to the effect produced by Linnaeus upon that branch of science.

His merit as a systematician is unquestionable; the clearness of his ideas, his love of science, his skill in abridging, abstracting, and arranging, is equalled by none. His systems of classification were excellent for the time when they were invented, although now worthless; and it is never reasonable to too readily to reject as temporary contrivances for reducing into order the confusion he found in all branches of natural history. Perhaps he believed his sexual system of botany a near approach to perfection, and that it was never as an artificial system (as he is boasted to have arranged it). As for the art of arranging the 6000 or 7000 species he was acquainted with, although it cannot be usefully applied to the vast multitudes of plants with which botanists are overwhelmed by the discoveries of modern travel. He never attached so much importance to it to which has been insinuated by his followers, who, unable to distinguish between the good and the end of his works, have claimed unbounded respect for everything that bears the stamp of Linnaeus. Neither is it necessary to disprove the absurdity of his greatest admirers and panegyrist has added, 'None but the most abandoned.' We have no disposition to ope up such a question as this, which is certainly not very fit for public discussion: but we are bound to say that there is truth in the allegation, and that the language is sometimes so lurid for the sake of its coarseness.

The domestic life of Linnaeus does not bear examination, for it is well known that he joined his wife, a profane woman, in a cruel persecution of his eldest son, an amiable boy, who died young. We may smile at the vanity which so often breaks out in the writings of Linnaeus, and at the fulsome admiration which he never allowed himself to have. The symptoms which he relates to his esculentian which no talent, however exalted, can wipe out. After the death of the younger Linnaeus his library and herbarium were purchased for the sum of 1000l. by the late Sir James Edward (then Dr.) Smith, and are now the property of the University of Cambridge. The herbarium, contained in three small cases, is in good condition, and forms a most curious botanical antiquity, of great value as the means of ascertaining with certainty the synonymy of the writings of Linnaeus. It has been very much used
LINNET, the name of a hard-billed sitting bird, which, though well known under one or the other of its various spellings to every English bird-catcher, has, in consequence of the changes of its plumage and the names and applied to it when it appears under those changes, given rise to much confusion in our systems and catalogues, and consider-
ably to the want of some brownish-black, male observer, in endeavouring to place before the reader the state of the
question, we shall, we fear, occupy more space than the title would, at first view, seem to warrant.

It is with great regret that the Philological Lexicon, says of the 'com-
mmon or brown linnet—Fringilla cannabina. Linn.: 'This disp
bird has been considered by most of our authors as two dis

different species, under the titles of common or brown Lin-
net and the greater Redpoll. This error has evidently arisen from the altered appearance it has at particular ages, dur-
eduring the different seasons of the year. These changes in all probability had not been suspected, as they certainly had not been traced by the earlier naturalists; and, on the authority of their reputation, succeeding writers sanctioned such statements, until the problem was exhibited to them by Mr. Selby for their diligence and acuteness in rectifying an error which seems to have been going on from the time of Willughby to the time of the publication of Bewick's 'Supplement,' 1552, without anyone venturing to give an opinion. The problem consists in this: the fathers of Natural History at the revival of letters. A little investigation will have proved that of Bö̂n, at least, it cannot be said that the changes of plumage had not been suspected nor traced by him. That acute observer had, however, been in the habit of confounding the 'linnet,' with the 'small blackbird' (Manuel d'Ornithologie) that Fringilla cannabina and Fringilla montana have been often confused, and that he has endeavoured to dis-
tinguish them by a small number of characters placed at the head of the short descriptions and of the synonyms,
which remarks have also been confirmed by other authors. The short character given by him to his Gros-beé Linotte (Fringilla cannabina, Linn.), is, 'Bill short, of the width of the front, blackish; throat whitish, marked in the middle; breast, red-brown; blackish-brown, white; of the quills black, bordered externally with white; tail forked, black; the feathers edged externally with white and bordered internally by a large white space; iris, brown; bill, deep bluish; feet, ruddy-brown, more or less pale. Linn. 351.

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

On the top of the head large black spots; the back reddish, with spots of chestnut-brown, bordered with whitish-
brown; breast, red ash-brown, or red-brown, with borders of whitish-red; hands, white; flanks, blackish-brown, or a little more brown; the tail coverlets black, bordered internally with white and externally with greyish-red. (On raising the feathers of the front and those of the breast, the traces of the red colours which ornament the bird in the spring may be seen.)

In this state M. Temminck considers it to be Fringilla Linota, Gmelin; Latham, Ind., v. 1, p. 457, sp. 81; La Linotte ordinaire, Buffon, Ois., v. 4, p. 58, t. 1; Id., Pl. Enl. 151, f. 1; Gérard, Tab. Æl. v. 1, p. 188; Common Linnet, Linnet, v. 1, p. 250, t. 33, f. 6, t. 3; Pale, and brown, or whitish (?).

The Female, which does not change colour after arriving at the adult state, is smaller than the male; all the upper parts are of a ashy-yellowish, sprinkled with blackish-brown spots; wing-covers of a tarnished red-brown; lower parts bright reddish, but with a black spot in the middle of the belly, and sprinkled on the flanks with numerous blackish-brown spots.

Young males till the spring, have on the top of the head the back reddish-brown marked with white; the breast, chestnut-brown; belly, white; with a few red-brown spots; cheeks and neck; sad; the lower parts of a slightly reddish-white, marked with white in the middle of the throat and on the breast with longitudinal spots of a deep brown; large reddish-brown spots on the sides; and large whitish spots on the crown. The crown, the back, and the neck are of a flesh-colour; base of the bill livid brown: it is then the bird given by Meyer, Vog, Diutahl, and from Frisch, Vog, t. 9, f. A and B.

For the Old Birds, Male and Female, M. Temminck brings together the following synonyms and references—Fringilla cannabina, Gmelin, Syll. v. 1, p. 916; Lath., Ind., v. 1, p. 458, sp. 82; Retz, Faun. Suec., p. 247, No. 226; La Grande Linotte de Vieuges, Buff. Ois., v. 4, p. 58; Id., Pl. Enl. 485, f. 1 (the male putting on its plumage) and Pl. Enl. 151, f. 2 (the very old male, under the false name of Petite Linotte de Vigne); Id., Pl. Enl. 151, f. 1 (either a female, or, possibly, a male in autumn); Gérard, Tab. Æl. v. 1, p. 190; Greater Red Headed Linnet or Redpoll, Linn. v. 3, p. 304; Id., Supp., p. 172; Bluthansingh, Bechst., Naturg. Deu., p. 3, v. 141; Id., Taschenb., p. 121; Meyer, Taschenb., v. 1, p. 163; Id., Vog. Deut., v. 1, t. 1, f. 1 and 2; Frisch, Vog., t. 9, f. 1 and 2; Naum, Vog., t. 5, f. 10 (old male of the female); Vlasvink, Sept. Lin. Vog., t. 1, p. 137; Montanotto Maggiore, Stor. degl. Ucc., v. 3, p. 3251, f. 1.

In the third part of his 'Manual' (1835) M. Temminck adds the following references and synonyms—Atlas de la faune, pl. libog. (male); Viell., Faun. Pranc., p. 77, pl. 38, fig. 2 and 3; Roux, Orn. Provenc., v. 1, p. 146, tab. 91 (old male in the spring), and 92 (male in autumn); Fichten und Busch Bluthansingh, Breih, Vog. Deut., p. 576; La petite Linotte de Vieuges, Buff. Pl. Enl. 151, f. 2 (male in moult); Naum, Neues Jug., tab. 121.

Vol. XIV.—E

P. C. No. 854.
Returning to the two first parts of M. Temminck's "Manuel" (2nd edit., 1820), we find him observing that the varietie thus described by Meyer under the letter c and that under the letter e ought to be arranged under Fringilla montium.

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

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

Mr. Selby (1825), after the remarks already quoted, proceeds thus:—Mr. Bewick however, in the Supplement to his work on British Birds, crine familiarizes to believe in the existence of two distinct species: for so we must understand him (although he has brought the synonymy of the two supposed species together), since in a note following the description and figure of his greater redpole, or brown linnet, he says:—"It loses the red breast in sun rise, and regains it in spring; in this it differs from the grey linnet, whose plumage remains the same at all seasons." From his description of the Grey Linnet (the usual Northumbrian name of this bird), as given in the first volume of his work, it is evident that the connexion of the common brown linnet of particular age, although he has attached to it the Linnean synonime of the lesser redpole. "If," continues Mr. Selby, "Mr. Bewick's observations on the plumage of the linnet were made upon caged birds, I am not surprized at his assertion of its always remaining the same appearance; for I have repeatedly verified the fact of its never acquiring, under confinement, those brilliant tints which distinguish it at a particular period of the year when in a state of liberty. It will lose one instancefh this analogy to the fact in question. For some particular observation of a linnet was shot more than two years ago, towards the close of summer, when the plumage showed its most perfect nupital tint; and, happening to be only winged, it was put in a cage to die. I kept it in my room. It was a common brown linnet, when it was killed. It frequently made the approach of the brilliant red that adorned it in the wild state."

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

Fringilla cannabina, Linn., Synt. i., p. 322, sp. 28.
Greater Redpole Finch, Shaw's Zoö., v. 9, p. 516.

Fringilla Linota, Gmel., Synt. i., p. 916; Lath., Ind. Ornith., v. i, p. 457, sp. 81.
Linaria, Rau., Syn. p. 80, a. 1; Will., Lin. p. 190; (Id., Ang.).—Br., sp. 123, 29.
La Linotte ordinaire, Buff., Oe., v. 4, p. 58, t. 1; Id., Pl. Ent., f. 1, 131.
Grey Linnet, Bewick's Br. Birds, i, p. 171.

Fringilla cannabina, Gmel., Synt. i., p. 916, sp. 28; Lath., Ind. Ornith., v. i., p. 455, sp. 82.
Estrilda rubra major, Br., sp. 139, 30; Redpoll, Gmel., Synt. p. 91, A. 2; Will., Lin. p. 191, t. 48.
Le Grand Linotte des Vignes, Buff, Oe., v. 4, p. 58; Id., Pl. Ent., f. 485, f. 2, old male under the title of Petite Linotte des Vignes.


Mr. Gould, in his "Birds of Europe," figures a male in the spring or nuptial plumage, and a female of the nat. size, under the title of Linaria caesarea, Le Gros-bec Linotte, Common or Brown Linnet. This refers to Mr. Selby principally for the account of the changes of plumage. He also notices the confusion which formerly obtained about this species.

Varieties.—M. Temminck observes that the bird varies accidentally to pure white; whitish, with the wings and tail as they are ordinarily; the colours feebly traced on the plumage; a part of the body white, or variegated with white feathers. All the plumage blackish, or more sombre than ordinary; the head in this plumage is brown. The head, however, of the linnet consists of small seeds generally; those of the cruciform plants are favourites. The nest is built in a low bush, most frequently in furze, of moss and stalks of grass interwoven with wool, and lined with hair and feathers. eggs, 4 or 5, bluish-white dotted with purplish-red. (Selby principally.)

The bird is provincially termed Greater Redpole, Rose Linnet, Grey Linnet, Lintwhite, and Lintice. Below is an opinion that this species is "disguised" in accordance to the name of Aigle (Aigithus) by Aristotle, in the fifteen chapter of his nineteenth book ("Hist. Anim."). The French and German names have been given above. It is the Fanello of the modern Italians, and Linneo and Linneo bincogan of the ancient Latins.

The common Linnet is prized for its sweet song, and has been taught to imitate the human voice. The Hon. James Barrington mentions the celebrated talking Linnet at Kensington. He heard it repeat the words "Pretty boy." Our limits will only permit a cursory notice of the other species generally considered as Linnetes.

The Rev. Leonard Jenyns, in his "Manual of British Vertebrae" (1835), makes the genus Linaria (Steph) consist of F. Liniara, Linn. (? F. Lininnen, Linn. (Common Linnet); Common or Brown Linnet of Selby, and Greater Redpole and Linnet of Montagu's "Ornith. Dict"); and F. Montium, Gmel. (Mountain Linnet).

Mr. Gould, in his "Birds of Europe," gives the following species of the genus Linaria of authors, in addition to the Common or Brown Linnet above noticed: Linaria montana, Mountain Linnet, or Tente; Linaria montecenis, Montes; and Linaria minor, Lesser Redpole.

The Mountain Linnet occurs as described by M. Temminck, on the authority of Dr. Von Siebold and M. Burger, of European species of birds found in Japan, where it is known by the name of Zusema. This is the Green Grosbek or Greenfinch of Mr. Temminck, and Linneo fynand of the ancient Brits.

The Green Grosbeak or Greenfinch (Y Gogaid, Linn) of the antient Brits) is sometimes called the Green Linnet. (Fringillidae, vol. 2; Greenfinch, vol. 2.)
LINSEED (Graisse de Lin, French; Leinsaat, German; Linzaad, Dutch; Linaza, Spanish; Linhoca, Portuguese; Linene, Italian; Semjalefianka, Russian), the seed of the Linum, or flax plant, which is valuable as well for its seed, as for the ligneous fibre of its cortical layer, which forms the tow spun into yarn and woven into linen cloth. [FLAX; LINEN.] It has been sometimes said that cotton is the substance from which cloth was made in Egypt in antient times. Cotton was no doubt known to the Hindus at very early periods, and may have formed an article of commerce to Egypt from India, but that it was not much used is proved by none of the mummy cloth, which has been examined by the best microscopes, being found to be composed of cotton. The seed is valuable for the condensed mucilage contained in its seed-coats, while the almond contains a fixed oil, valuable for burning, and in the arts as a drying oil; the oil-cake is used for fattening cattle. Linseed is extensively imported from Russia, Italy, and Egypt, for crushing, but of late years it has been imported in large quantities from India for the same purpose; this is found to yield a larger proportion of oil than Russian linseed, and the commerce will no doubt continue to increase. Seed is also imported from Holland, America, and other places for the purpose of sowing, as it is found to yield a finer and more abundant crop than the British seed. It is curious that the Hindus make no use of the ligneous fibre, but the plants, though they there produce fine seed rich in oil, are very dwarfish, and may not therefore be found profitable; a culture for a people who have cotton in such abundance, and who wove it into cloth in ages when even linen was unknown in Europe.

LINSEED-OIL may be procured by cold expression of the seeds, a process which makes the oil clearer; or the bruised seeds are roasted in the oil-mills, in which case it is brownish-yellow, and easily becomes rancid, probably from attracting oxygen. Linseed oil is peculiar, with a faint but peculiar odour and taste, generally disagreeable, from being subrancid. Specific gravity 9.3. It easily dries: by reduction of temperature it merely becomes cloudy, but scarcely freezes. It may easily be purified by repeated agitation with water, by bleeding in the sack, or better, by filtering it through newly prepared charcoal. By long boiling it becomes dark-brown, tenacious, and thickened, but dries more easily, and in this state is used for printers' ink, by still longer boiling it becomes black, almost solid, and elastically tenacious, like caoutchouc, and in this state it serves for bird-line.

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

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

LINCHAILA. [FORAMINIFERA, vol. x., p. 346.]

LINUM, a genus of plants which gives its name to the family of the Linacées, and is characterized by having five distinct sepals, five petals, five stamens, and from three to five styles, which are either distinct from the base, or united as far as the middle, or even the apex. Capsule oblongo-ovate, divided into ten cells, each containing a single seed. Herbaceous shrubs; leaves entire, without stipules; flowers during the petals falling off shortly after flowering. The species are chiefly found in Europe and the north of Africa, but a few likewise in other parts of the world. Few however are of any importance, except that which has been an object of culture from the earliest times of which we have any record, that is Linum usitatissimum, or the flax plant, which is valuable as well for its seed, as for the ligneous fibre of its cortical layer, which forms the tow spun into yarn and woven into linen cloth. [FLAX; LINEN.]

LINUM USITATISSIMUM, Medicinal Properties of. The seeds of this plant yield several articles useful in medicine and surgery. The tests, or husk of the seeds, is very mucilaginous, the kernel contains much oil, and the farina or meal, procured by grinding or bruising the seeds, after the oil has been expressed, furnishes an excellent material for poultices. [CATAPLASTS.] The seeds are oblongo-ovate, acute, compressed, brown, shining, very smooth, the skin thin, the kernel white and oily. They are devoid of odour, but have an unpleasant mucilaginous oily taste. Old, rancid, and corroded seeds should be rejected. One part of seeds and two parts of water yield a strong mucilage. It is much better to obtain the mucilage by merely pouring cold water on the entire seeds, than to bruise them and pour boiling water on them, as generally directed. The mucilage is analogous to that of the quince seed (Cydonia), and differs in its chemical habits, in several respects.
from common gum. The compound infusion of linseed is emollient, and the unpleasant taste may be much lessened by using cold water to form it, as stated above. The fumes of the seeds, ground before the oil has been expressed, furnishes the best material for poultices, but does not keep well. The cake remaining after the expression of the oil is much used to fatten cattle, but gives a peculiar taste to the meat.

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

LINZ, the capital of Upper Austria, in 48° 19' N. Lat. and 14° 17' E. long., is agreeably situated at the junction of the Traum and the Danube, over which latter river there is a wooden bridge 864 feet long. It is divided into four sections, viz. the town and the three suburbs. The old town consists of one long street, and is of much less extent than the suburbs. There are four gates and three squares, in the largest of which there is 'the Pillar of the Trinity,' erected by the Emperor Charles VI. in 1723, and also two fountains. It is on the whole well built, for which it is not a little indebted to several fires, after which the parts destroyed have been always much improved; this was especially the case after a very great fire in 1800, which consumed the county hall, the castle, and many other buildings. There are seven churches, the largest of which is the cathedral, formerly belonging to the Jesuits. Other remarkable buildings are the government-house, the new county hall, where the provincial Estates meet, a very magnificent edifice; the town-hall, built in 1414; the city brewery, the custom-house, the gymnasia, the handsome theatre, and the great imperial manufactory of woollen cloths and carpets, which in its most flourishing period gave employment, directly or indirectly, as it is stated, to 25,000 workmen, and used 5000 cwt. of wool annually. At present the number of workmen is only 10,500, exclusive of the numerous mechanics and artisans in Linz to whom it affords employment. It suffered severely by the French invasions. Linz is a bishop's see, and has a lycenum, with a library of 25,000 volumes, several public schools, a deaf and dumb asylum, and many charitable institutions. There are considerable manufactures of calico, dimity, leather, gunpowder, &c. The population of the town and suburbs, including some adjacent villages, is 23,500. It is a place of considerable trade, which the iron railroad to Budapest in Bohemia and the lately established steam-navigation of the Danube to the Black Sea must greatly increase. In order to defend Austria on the west, Linz was chosen for the execution of a new system of fortification invented by the Archduke Maximilian of Este.

LION, the English name for the form in which carnivorous development is generally considered to be the most perfect: 

Aion (Leon) of the Greeks (Aion, Leones); Leo of the Romans (Leo and Leonis, Lioness); 

Leone of the Italians; 

Lion of the French (Louero, Lioness, Lionceau, Whelp); 

Löwen of the Germans (Löwen, Lioness). The male is, as a general rule, ornamented with a mane; the female has no such ornament.

**Organisation.**

The organisation of the lion is treated of in the article Felis, vol. x., and the reader is requested to bear in mind that the short descriptions under the figures of the claws (p. 218) are misplaced: fig. 1 being from the forefoot, and fig. 2 from the hind foot. In addition to the points there stated we must draw attention to the following. There are, it appears, distinguishing characteristics marking the differences between the skulls of the Lion and Tiger; and Mr. Owen explained these to a meeting of the Zoological Society of London (1834), when several crania of these two species were exhibited. He adverted to the distinctions pointed out by Cuvier in the 'Osservens Fossiles,' and remarked on the first of them, viz. the straightness of the outline in the lion from the midspace of the postorbital processes to the end of the nasal bones in one suture, and the occiput in the other, as not being in all cases available; but he regarded the second distinction—the flattening of the interorbital space in the lion and its convexity in the tiger—as being more constant and appreciable. He pointed out however a distinction which had never, according to his belief, been published, which is, he observed, well marked, and which appears to be constant; for he found it to prevail throughout the whole of the skulls of these animals which he had examined, including ten of the lion, and upwards of twenty of the tiger. It consists in the prolongation backwards in the cranium of the lion, of the nasal processes of the maxillary bones to the same transverse line which is attained by the coronal or superior ends of the nasal bones; in the tiger the nasal processes of the maxillary bones never extend nearer to the transverse plane attained by the nasal bones than one-third of an inch, and sometimes fall short of it by two-thirds, terminating also broadly in a straight or angular outline, just as though the rounded and somewhat pointed ends which these processes have in the lion had been cut off. Mr. Owen noticed also minor differences in the form of the nasal aperture, which in the tiger is disposed to narrow downwards and become somewhat triangular, while in the lion its tendency is towards a square shape; in the deeper sinking in a longitudinal depression of the coronal extremities of the nasal bones in the tiger than in the lion; in the bounding of this depression above in most of the tigers' crania by a small but distinct semicircular ridge, which is not found in those of the lion; and in the larger comparative size, chiefly in their transverse diameter of the infraorbital foramina in the lion. Mr. Owen remarked that it was curious that these foramina were double either on one or both sides in the only four skulls examined of lions which were known to be Asiatic, whilst...
in all the others the foramen was single on each side. (Zool. Proc., 1834.)

Another communication to the same Society becomes interesting from its being associated with the popular belief that the lion lashes his sides with his tail to stimulate himself into rage. There was exhibited at one of the meetings (1832) a claw, believed to be the tip of the tail of a young Barbary lion presented to the Society's menagerie by Sir Thomas Read, then his majesty's consul at Tripoli. It was detected on the living animal by Mr. Bennett, and pointed out to the keeper, in whose hands it came off whilst being examined. The claw was presented to Mr. Woods by the editor of that work on the tail of a leopard. No such structure however was detected by Mr. Woods on a living individual in the Society's menagerie. In the leopard therefore, as in the lion, it appears to be only occasionally present. In both it is seated at the base of the tail, like the bulb of a bristle or vibrisma, than to adhere to it by the margin, as described by M. Deshayes.

Neither the published observations of that zoologist nor the discovery then communicated to the Society could, it was observed, throw any light on the existence or structure of the supposed follicular stumps noticed by Blumenbach.

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

Mr. Woods, thinking it probable that these prickles might exist in other species of Felis, has previously examined the tails of nearly the whole of the stuffed skins in the Society's museum, but failed in detecting it in every instance but one. This was an adult Asiatic leopard, in which the tail was evident, although extremely small. It was short and straight, and perfectly conical, with a broad base. Mr. Woods observed that it was stated in a note in the Edinburgh Philosophical Journal, where a translation of Blumenbach's paper had been given, that a claw or prickle had also been observed by the editor of that work on the tail of a leopard. No such structure however was detected by Mr. Woods on a living individual in the Society's menagerie. In the leopard therefore, as in the lion, it appears to be only occasionally present. In both it is seated at the base of the tail, like the bulb of a bristle or vibrisma, than to adhere to it by the margin, as described by M. Deshayes.

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Prickles at the end of Lion's tail. (Blumenbach.)

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

Geographical Distribution.

The true Lions belong to the Old World exclusively, and they were formerly widely and plentifully distributed; but at present they are confined to Asia and Africa, and have been exterminated in all the European quarters of the globe. That Lions were once found in Europe there can be no doubt. Thus it is recorded by Herodotus that the baggage camels of the army of Xerxes were attacked by Lions in the country of the Pannonians and Crestonians, on their march from Acanthus (near the peninsula of Mount Athos) to Thermus, afterwards Thessalonica (now Saloniki): the camels alone, it is stated, were attacked, other beasts remaining untouched as well as men.

The same historian also observes that the limits in Europe within which Lions were then found were the Sava or Nessus, a Thracian river running through Abdera, and the Achelous, which waters Acrania. (Herod. viii., c. 125-126, Schweigg.*; and see the article Atos, p. 27.) Aristotle (vii. 31) says that the Lion is in fact an animal but little known. 'In the whole of Europe, for example, there are no Lions, except between the Achelous and the Nessus.' Again, the same author (viii. xxxiv. 31 of Scaliger's division) mentions Europe as abundant in Lions, and adds that 'all parts which are between the Achelous and Nessus, apparently copying the statement of Herodotus. Pliny (vii. 16) does the same, and adds that the Lions of Europe are stronger than those of Africa and Syria. Panormus copies the same story as to the attacked the camels of Xerxes, and he gives the same reason for it. The editor of the Xenoph. Memoriam observes that Lions often descended into the plains at the foot of Olympus, which separates Macedon from Thessaly, and that Pindar, in a celebrated athech, a contemporary of Democritus, alludes to them, although he was island. The passage in Olymp. (v. 28) says: and we prated, here part of the Macedonian Lion of Olympian, p. 30.)
which some have considered as indicating the existence of Lions up to the banks of the Danube, fails as an authority for placing the Lion in that locality, because, as Cuvier observes, the context shows plainly that the name of Ister is there applied to an Armenian river, either by an error of the transcriber or an incorrect rendering of the name Leontum tantum in Syria niger. \* Aelian (xvii. 26) distinguishes the Lions which come from India other Lions, stating that the skin of the Indian Lions is black. Oppian (iii), towards the beginning of that book, notices the different species of Aranesus, Arabia (\textit{Sphinx aegyptia}), Libya, and Ethiopia.

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

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

PENNANT ('Hist. Quadr.', 3rd edition) appears to coincide in opinion with Buffon, Linnaeus, and Gmelin; for he mentions no distinctions, and describes the Lion as an inhabitant of most parts of Africa, and rarely of the hot parts of Asia, such as India and Persia; and a few are still met with in the deserts between Bagdat and Bassorah, on the banks of the Euphrates. Mr. Niebuhr also places them among the animals of Arabia; but their proper country is Africa, where they are in full use, and their size is greatest, and their rage more tremendous, being inflamed by the influence of a burning sun upon a most arid soil. Doctor Fryer says that those of India are feeble and cowardly. In the interior parts, amidst the scorched and deserted deserts of Omor, Zara, or other desert places, they live in great solitudes; they lord it over every beast, and their courage never meets with a check, where the climate keeps mankind at a distance; the nearer they approach the inhabitants of the human race, the less their rage; the greater is their timidity; they have often experienced the effects of man and beast, and finding that there exists a being superior to them, commit their ravages with more caution; a cooler climate again has the same effect; in the burning heat, they retire; on the other hand, they live in a perpetual fever, a sort of madness fatal to every animal they meet with.

Dr. Leach raised the term to the rank of a genus under the name of \textit{Leo}.

Mr. Lecky ('Manual', 1827), gives four varieties, viz. the Lion of Barbary, the Lion of Senegal, the Lion of Persia or Arabia, and the Lion of the Cape.

Cuvier ('\textit{R\'egne Animal}', his last edit., 1829) places at the head of the great genus \textit{Felis} \textit{Le Lou (Felis Leo, Linn.)} and describes it as distinguished by its uniform yellow colour, the tuft of hair at the end of the tail and the mane which covers the head, neck, and shoulders of the male. 'It is,' continues Cuvier, 'the strongest and the most imposing of all the animals of the world, at least of the time, over all the parts of the antient world, it would appear the present day nearly confined to Africa and some neighbouring parts of Asia.'

Mr. Temminck, in his \textit{Monograph}, includes three varieties, and names them the Lion of Barbary, and \textit{Persia}, and these are retained in Dr. Fischer's \textit{Synopsis}.

Mr. Bennett ('Tower Menagerie', 1829) notices the Bengal Lion of the Cape Lion, and the Barbary variety (figuring the two former).

Sir William Jardine ('Naturalists Library, Mammalia', vol. ii., \textit{Felinae}, 1834), in addition to other plates, has given a figure of the Asiatic variety from a specimen presented by the Roman Consul. He does not, however, noticing that the Lions of Africa and India have been described as varieties, states his strong suspicions that future ob-
The Lion recognition the black-maned* and Felis, more
Oogorucie-

The African Lion—Temminck notices two varieties of the African Lion— that of Barbary and that of Senegal. M. Lesson adopts these two varieties, and adds the Lion of the Cape, of which he gives two varieties.

The Lion of Barbary—This Lion is described as having a deep yellowish-brown fur, and the mane of the male is stated to be very much developed.

The Lion of Senegal is characterized by a fur of a more yellowish color, the mane is still more conspicuous, and nearly wanting upon the breast and inside of the legs.

The Lion of the Cape presents two varieties, one yellowish and the other brown, the latter is regarded as the most ferocious and dangerous of the species. The heads of the 'Black' kinds, and it seems indeed that there is a 'black-maned' Lion, one of which, accompanied by his Lioness, Mr. Burchell appears to have encountered in his travels in Africa. (See post.)

The Lion of the Forest is a title not very applicable to an animal which he, at least, never met but on the plains; nor did he ever meet with one in any of the forests where he had been. The low cover that creeps along the sides of streams, concealed the life of most of the springs or the rank grass of the valley, seem to be the shelter which the African Lion for the most part seeks. Of the strength of this variety we have most extraordinary examples on record.

To carry off a man, and there are dismal accounts of this horrible fact, which there is no reason to doubt, appears to be a feat of no difficulty to this powerful brute. Indeed when we find that a Cape Lion seized a heifer in his mouth, and, though the legs dragged upon the ground, seemed to carry her off with something more than mere grasping. We have been told by one very good authority, that another, and a young one too, conveyed a horse about a mile from the spot where he had killed it—and that a third, which had carried off a two-year-old heifer, was followed on the second day by a black-maned lion, which was observed to be in pursuit of the heifer, as well as of the horse, and that the latter was only once or twice discovered to have touched the ground. The apportionment of a man shrinks into insignificance as a demonstration of strength. There seems to be an idea that the Lion preys a human prey; but be this as it may, the inhabitants of certain districts have, it appears, been under the necessity of resorting to a curious expedient to get out of their reach. Messrs. Schoon and M'Luckie, in 1835, penetrated the back of Kurrikhane, situated about 150 miles to the north-east of Litkou. They discovered, east of Kurrikhane, or Chuan, as it is more properly named, the river Moria, which rises in the south between the 25th and 26th degrees of latitude, and 29th and 30th degrees of longitude, taking a north-easterly course, and about 100 miles from the ford enters a high range of mountains. Hence, according to the natives, it flows into the sea, through the country of the Mantatees. About 70 miles to the eastward, the range of mountains, or the range direct to the south, along the base of the mountains, is a place called "Ongorucie-Fountain," where there is a large tree containing seventeen conical horns. These are used as dormitories, being beyond the reach of wild beasts, and it is said that since it has been published, persons visiting the Mantatees, when so many thousands of persons were massacred, have become very numerous in the neighbourhood and destructive to human life. The branches of these trees are supported by forked sticks or poles, and there are three tiers or platforms on which the huts are constructed. The lowest is nine feet from the ground, and holds ten huts; the second, about eight feet high, has three huts; and the upper story, if it may be so called, contains four. The ascent to these is made by notches cut in the sides of the huts. But the huts are roofed with straw, and will contain two persons conveniently. The travellers had previously visited several deserted villages similarly built between the Moria and Leuctere rivers, as well as the district at the south where are erected huts about eight feet above the ground and about eight feet square, larger in some places, and containing about seventy or eighty huts. The inhabitants sit, it is stated, under the shade of these platforms during the day, and retire to the elevated chambers at night.

The general prey of the African Lion consists of the larger herbivorous quadrupeds, very few of which is it unable to master, and it is a severe scourge to the farmer, who is consequently ever on the look-out for lions, and generally makes use of the most irritable and unerring shot. Though mortal accidents frequently happen in these hunting, the cool sportsman seldom fails of using his rifle with effect. Lions when roused, it seems, walk off quietly at first, and if no cover is near, and they are not pursued, they gradually mend their pac, till they are again discovered, and then they bound away. Their demeanour upon these occasions has been described to us by eye-witnesses to be of a careless description, as if they did not want a fray, but if pressed, they proceed with great alacrity. Infrequent are they taken in the act of hunting, and close to the dogs will, by leaving the lion unhurt, the infuriated beast frequently charges on his enemies, dealing destruction around him. This however is not always the case, and a steady unshrinking deportment has, in many instances, one result. Mr. Burchell writes: 'The only account in my possession in his African travels of his confronting one of these animals.' The day was exceedingly pleasant, and there was not a cloud to be seen. For a mile or two, we travelled along the banks of the river, which, in this part, abound in tall grass, the dogs much to enjoy prowling about, and examining every bushy place, and at last met with some object among the rushes which caused them to set up a most vehement and determined barking. We were soon informed that we were expected, from the peculiar tone of their bark, that it was what we suspected it to be,—lions. Having encouraged the dogs to drive out, a task which they performed with great willingness, we had a full view of an enormous lioness and some smaller ones. The lions had been in pursuit of a man for a minute, as she made her escape up the river, under the concealment of the rushes; but the lion came steadily forward and stood still to look at us. At this moment we felt our situation not free from danger, as the animals preparing to spring upon us, and we were standing on the bank, at the distance of only a few yards from him, most of us being on foot and unarmed, without any visible possibility of escaping. I had given my horse to the hunters, and was on foot myself; but there was no time lost in giving him and the lion, and surrounding him, kept him at bay by their violent and resolute barking. The courage of those faithful animals was most admirable: they advanced up to the side of the beast, and barked so vehemently that the beast was almost to itself, and with the least appearance of fear. The lion, conscious of his strength, remained unmoved at their noisy attempts, and kept his head turned towards us. At one moment, the dogs perception his eye thus engaged, had scattered and seemed about to flee; but the lion instantly seize hold of him; but they paid dearly for their imprudence, for, without discomposing the majestic and steady attitude in which he stood fixed, he merely moved his paw,
and, at the next instant, I beheld two lying dead. In doing this he made so little exertion, that it was scarcely perceptible by what means they had been killed. Of the time which we gained by the interference of the dogs, not a moment was lost; we fired upon him; one of the balls went through his side, just between the short ribs, and the blood generally darker colour, and the less extensive mane of the African. He gives a beautiful cut of the Bengal Lion, executed by Harvey, in the 'Tower Menagerie,' from a very fine specimen little more than five years old, then in the collection, but called by the keepers 'The Old Lion.' The magnificent development of the mane is very striking.
Lion says Olivier ('Voyage dans l'Empire Othoman, l'Egypte, et la Perse, tom. iv.), "which inhabits the part of Arabia and Persia near the river of the Arabs, from the Persian Gulf to the environs of Helles and of Bagdad, is probably the species of Lion of which Aristotle and Pliny have spoken, and which they regarded as a different species from that which is spread over the interior of Africa. The Lion of Arabia has neither the courage, nor the stature, nor even the beauty of the common, nor the comparative ferocity of the African species. He is graceful rather than fierce: he crouches among the reeds which border the Tigris and Euphrates, and springs upon all the feeble animals which come there to quench their thirst, but he dares not to attack the boar which is very common there, and he perceives a man, woman, or even a child. If he catches a sheep, he makes off with his prey; but he abandons it to save himself, when an Arab runs after him. If he is hunted by horsemen, which often happens, he does not defend himself, unless he is wounded, and has no chance of safety by flight. In such a case he will fly on a man and tear him to pieces with his claws: for it is courage more than strength that he wants."

"We saw," continues Olivier, "five individuals of this rare species, that escaped, exclusive of the pacha who had been there five years and had been taken young in the environs of Bassora: there were three males and two females; the former were a little larger than the latter; and all resembled the African species, excepting that there were no signs of the long tail of the manes of the majority, that they never had any, and that no lion of these countries had one. We have often regretted that we did not ask the pacha for two of them, in order to make a close comparison with the African species, and to satisfy ourselves whether the lions of Arabia, ought to be regarded as a species distinct from the other, or as a degenerate race."

In Griffith's Cuvier's 'Règne Animal' there is a notice that a manekes and brownish coloured species of Felis, larger than a Lion, had been expected to be forwarded from Nubia to Bombay, whereas I were previously a mane (that is, it is manekes as compared with other Lions), from the sides of the neck and shoulders, a middle line of hair on the back of the neck being along the spine of the colour is freckled, the ears of the same colour as the mane, a short tail of long loose silky hairs, and a tuft at the angle of the exterior legs. Besides the absence of the extensive mane, the tail is shorter than that of the African Lion. Above each eye is furnished at its tip with a much larger brush or tuft. In this tuft there existed in the oldest of Captain SMEERS LION, subsequently to the arrival of the skin in England, a short hair or tail, similar in form to, but somewhat larger in size than, that described by Mr. Woods, and above alluded to.

Captain SMEERS, who, in the Transactions of the Zoological Society, enters into a very minute description of the arrangement of the hair in this variety, both in the male and the female, is of the opinion that these depilations are subject to considerable variations in intensity of colouring. In both the colour is fulvous; but in some individuals, he says, this is much paler than in others, and in the darker specimens there occurs a tinge of red. The middle of the back is usually of the same colour as the mane, but correctly, according to the situation of the face is much paler and almost white. Among the hairs there is an intermixture of some which are entirely black, and the greater or less proportion which these bear to the paler ones is the principal cause of the variation in the colour of the face in the different individuals. Of the Guzerat Lions the oldest individual is the lightest in colour. The tail becomes gradually paler towards its extremity, passing into greyish white; its terminal brush consisting of long hairs slightly tinged with brown. Above each eye is furnished with a white hair, and which is included a darker coloured spot for the implantation of the supraciliary vibrissa, from which the longest reaches nearly to the ears. In the African Lion these vibrissae are implanted in a darker spot, but this is less defined, and is only partly bournen of a paler space. In both the points of insertion of the moustaches are darker than the surrounding parts. Captain SMEERS does not speak with certainty of the comparative form of these two varieties: but he states his impression to be that the Lion of Guzerat is similar to the other, without any considerable difference. He may be a little shorter than the former, his head especially being of the same, while that feature is defined and visible in the other. The erminium of the Lion of Guzerat generally resembles that of the African race. Mr. OWEN has remarked that the infra-ocular foramina were double in the only case known to be African examined by him; in high killed in North Guzerat, this occurs, both in the other, killed near Assand, it is found on one side only. Captain SMEERS states that in a young skull of the Manekes Lion there exists on one side a double infra-ocular foramen, and that the existence of the same is a common feature. The skull contained in one of the skins had been ascertained. A male manekes Lion killed by Captain SMEERS measured, including the tail, 8 feet 94 inches in length, and his total weight, 216 lbs. of flesh, 60 lbs. of bone, 8 lbs. of horn (called stone): the impression of his paw on the sand measured 6 inches across, and his height was 3 feet 6 inches. A female killed at the same time was 8 feet 7 inches long and 3 feet 4 inches high.

In the locality and Habits of the Guzerat Lion—These manekes Lions, are, according to the author last above quoted, found in Guzerat along the banks of the Sombermuttee near Ahmedabad. During the hot months they inhabit the bow basin wooded plains which skirt the Bhardar and Sombermuttee river from which they are probably being driven out of the large adjoining tracts of high grass jungle (called Bheens) by the practice annually resorted to by the natives of setting fire to the grass, in order to clear it and ensure a succession of young shoots for the food of the animals. They may be considered to range over a country of about 40 miles in length, including various villages, and among others those of Boroo and Guliana, near which Captain SMEERS killed his finest specimens. They were so common in this district that he killed a young male in a day or two, and he says, 'where they are seen at all they are very few and very rare': yet scarcely any of the natives, except the cattle-keepers, had seen them previously to his coming among them. The cattle were frequently carried off or destroyed, but this they were not sure. When they were driven into the desert by the wilder beasts of the region, the Tiger does not exist in that part of the country. Those natives to whom the Lions were known gave them the name of Outith Buga, or Cemel Tiger, an appellation derived from their resemblance in colour to the Camel. They applied as much to the Manekes Lion as to the African Lion. The remains of a considerable number of carcasses of bullocks were found near the place where Captain SMEERS specimens were killed; about ten days previously, four donkeys had been destroyed at the village of Cashwah. Captain SMEERS could not learn that man had been attacked by them. When struck by a ball, they exhibited great boldness, standing as if prepared to resist their pursuers, and then going off slowly and in a very solemn manner; unlike the Tiger, which on such occasions retreats springing and bounding, and makes his appearance at the usual顷 of the road. They were found on the Run the near Runhob, and near Puttan in Guzerat, and that some persons who saw them in Bombay said that they also occur in Sind and in Persia; he further observes, that should subsequent inquiries prove that Olivier is correct in the opinion that there is no Manekes Lion, seen by him at Bagdad were obtained, and prove also their identity with those of Guzerat, a more extensive geographical range will be established for this curious race than Captain SMEERS is at present disposed to regard as probable.

Captain SMEERS remarks that he is aware that the existence of these manekes Lions in Guzerat had been previously although by no means generally known, and quotes Liout. Col. BONAPARTE as having this knowledge. Sir Charles MALET has also seen Lions on the banks of the Sombermuttee, and though he makes no mention of the absence of the mane,
Captain Smee thinks that they in all probability belonged to "this maneeless race," and indeed Sir Charles attributes to his Lion the native name noticed by Captain Smee above. Our author makes the following remarks on the passages usually to be found in the animal writers bearing this subject: "Having alluded in the commencement of this communication, to the opinion that a maneless Lion was known to the ancients, it might be expected that I should here bring forward and discuss the several passages which have been looked upon as supporting this view." Where however the critics are at fault, it would be presumptuous in me to attempt to decide. I own that I do not find in the passages usually referred to any evidence at all satisfactory as regards the existence of Lions destitute of mane; and I am even far from willing to admit that the crested but noticed by Aristotle as distinguishing one race of Lions from another, in which the hairs were either dense or straight, must of necessity be considered as those of the mane rather than of any other part of the body. The language of Oppian is equally obscure, and even the expressions used by him are warmly contested by the critics. Another Greek writer, Agatharchides, the peripatetic, speaks of the Arabian, and especially the Babylonish Lions, in terms that recall Olivier's description of those of Bactria, but still with no definite application to the want of a mane. Pliny alone, so far as I am aware, mentions the absence of mane as a distinctive mark of one race of Lions; but to this race he attributes a monstrous generation, and he was probably altogether misled with respect to it.

While we may remark that a maneless Lion is said to be represented on the monuments of Upper Egypt.

Captain Smee thus characterizes his Maneless Lion:—

Felis Leo, Linn., var. Geojubrata.—Mane of the male short, erect; tuft at the apex of the tail very large, black. (See Zool. Proc., 1853; and also Zool. Trans., vol. 1, where an excellent figure is given.)

Habits of the Asiatic varieties generally. Chace, &c.—The habits of the Asiatic Lions do not differ much from those of Africa, excepting that the former, from the state of the country, frequent the jungles and bushes, while this species is generally employed in the chase, which is even now conducted with more pomp and circumstance than in Africa. The grand Asiatic huntings of former times, those of Genesus Khan for instance, will occur to many of our readers. The wild animal will, in some measure, give a most courageous bearing to the Lions in these encounters. One of these states that the Lions in India, instead of running away when pursued through a jungle, sulk to take cover as a refuge at all. On the approach of such they would spring out and charge the men mounted in the plain. They are thus easily shot; but if they are missed or only slightly wounded, they are most formidable adversaries. They are even said to have sprung on the heads of the largest elephants, and to have fairly pulled them to the ground, riders and all.

**Reporduction of the Lion, &c.**—The Lions is said to go with young five months, and produces generally from two to three or four, *at* a litter, which are born blind. Three, two males and a female, were whelped in the Tower of London on the 20th October, 1827, by the gift of the battle of Navarino; but the number seems generally to be two. In captivity the Lions usually become very savage as soon as she becomes a mother; and in a state of nature both parents guard their young with the greatest jealousy. Mr. Bennett has observed that tigers, when tamed, are exceedingly attached to their young, and that T. B. Watson, then on service in Bengal, being out one morning on horseback armed with a double-barrelled rifle, was suddenly surprised by a large male Lion, which bounded out upon him from the thick jungle at the distance of only a few yards, and shot him, taking complete effect, the animal fell dead almost at his feet. No sooner had the Lion fallen than the Lioness rushed out, which the General also shot at, and wounded severely, so that she retired into the thickets. Thinking that the den could not be far distant, he traced her to her retreat, and thenpatched her, and in the den were found two beautiful cubs, a male and a female, apparently not more than three days old. These the General brought away; they were suckled by a goat, and sent to England, where they arrived in September, 1828, just a century after Smee described the Lion in the Tower. The male was the animal from which Mr. Bennett gives his figure and description of the Bengal Lion, and the female was the mother of the cubs whelped in the Tower, above alluded to. (Tiger Menagerie.) The young are at one time lifeless, and the coat is whitish, but it becomes a warm light tawny or buff, and is clothed in the coat. There is generally a black stripe extending almost along the back, from which numerous other bands of the same colour branch off, nearly parallel to each other on the sides and face. The head and limbs are generally obscurely spotted. When young they are very like, so as to be indistinguishable, but the uniform colour is gradually assumed, and at the age of ten or twelve months the mane begins to appear in the males; at the age of 18 months this appendage is considerably developed, and they begin to roar. Mr. Bennett states that it is nearly the third year before the mane and the tuft on the tail appear, and that they are not fully developed before the seventh or eighth year. It should however be borne in mind that the Bengal Lion mentioned by Mr. Bennett, and figured by him, was killed in the forest, and he was little more than five years old.

The period of shedding the milk-teeth is very often fatal to the young animals in a state of captivity. The natural period of a Lion's life is generally supposed to be 20 or 22 years. Such a number of the animals of this species have been brought to Europe that it seems much longer. Pompey, the great Lion which died in 1760, was said to have been in the Tower above seventy years; and one from the river Gambia is stated to have died there at the age of sixty-three.

The power and supposed generosity of disposition, has been popularly hailed as the king of beasts, and considered as the emblem of majesty and might. It is the symbol of the British nation, and is borne in the royal arms, of which it forms one of the supporters, and which it sustains.

The generosity of disposition so liberally accorded to this powerful beast has been much and eloquently praised. It seems almost sacrilegious to dissipate the glowing vision which Buffon has raised; but if there is any dependence to be placed on the observations of Coebrunner and20
d'Orbigny, he had the best opportunities of judging, and have the highest character for veracity, we must be compelled to acknowledge that Buffon's Lion is the lion of poetry and prejudice, and very unlike the cautious lurking savage that steals on its comparatively weak prey by surprise, overpowers it without mercy, and devours it without restraint.

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1. Cuvier quotes Philoctetes for the fact that Apollonius of Tyana saw a number of Lions, and that they killed at least twelve men. (See Pallas' Nat. Hist. vol. xiv. p. 153.)

2. Captain Smee remarks, in Allusion to the Hybrid mentioned by Pliny, that "it is by so many improbable that the maneeless line be not what our observers thought when they annexed her to the species, may have been accidentally to represent a "lion." This term, he observes, is still in use among the breeder of Przewalski, and is still used by the Native."
at once by the terror, the weight, and the violence of the attack, and is intent only on the gratification of its appetites. 'At the time,' says Mr. Burchell, 'when men first adopted the lion as the emblem of courage, it would seem that they regarded great size and strength as indicating it; but they were greatly mistaken in the character they had given to this indolent animal.' The fable of the Lion sparing the dog that was thrown to him, and making a friend of the little animal that was destined for his prey, has been much dwelt on; but these and other such acts of mercy, as they have been called, may be very easily accounted for. If not pressed by hunger, the Lion will seldom be at the trouble of killing prey; and the desire for a companion has created much stronger friendships between animals in confinement than that between a lion and a dog.

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

HYBRIDS.

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

PUMA, OR AMERICAN LION.

The uniformity of colour in this great cat, combined with considerable ferocity, were probably the reasons which induced early travellers in America, who heard of it perhaps with circumstances of exaggeration, or caught hasty glimpses of it not unaccompanied with terror, to state that there were Lions in America. Thus, John de Lasa (1633) says, that Lions are found in Peru, though they be few, and not so ferocious as they are in Africa, and that they are called in the native tongue Puma. In an old tract (1649), entitled 'A Perfect Description of Virginia,' we find among the 'Beasts great and small,' 'Lynx, Beares, Leoparde, Elks,' &c.; and Garcilasso tells us of the Puma, or Lion of Peru. In Hernandez (1651) there is a long account of the animal under the name of 'Puma, seu Leo Americanus;' and reasons are given to show that it is not a true lion.* In Piso the animal is noticed as the Cugurva, and by Meregare as the Cugurvarana of the Brazilians; hence the French name Cougar. Charlevoix describes it closely enough under the name of Caracoue, or Cocoue; thus name Pennant thinks that Charlevoix gave by mistake. In D'Azara's Guazzoura of Paraguay there trace the French name of this animal. Lawson and Catesby both describe it under the name of the Puma, which designation it is known to the Anglo-Ameri-ans to be the Mundi of Ternandes in the catalogue at the end of the

* The name Pezimbo, Ocelot, and Taitocaos, evidently refer to the canes up to this day. It is the Felis concolor of Schreber and of zoologists generally, and though Linnaeus is often quoted as the author of the name, it will not be found in his last edition of the Systema Naturae. In Gmelin's edition it appears as Felis concolor (an error for concolor), with Schreber's description. It is the Felis Puma of Trail, and the Felis Puma of America.

The reader will find in the 'Proceedings of the Zoological Society of London' (1833) a detailed account of the dissection of a Puma that had died at the Society's garden. The paper is a very pretty one, but our limits will only permit us to notice that in point which, if it is allowed, one of the greatest differences obtained among the cats. This point is that part of the structure which is connected with the organs of voice, and, as Mr. Martin observes, some surrounding muscles must necessarily produce the deep-toned roar of the Lion, the snarl of the Jaguar, and the hissing cry of the Puma. The distance between the tongue and the larynx in the Lion, says Mr. Martin, has been brought more than once under the notice of the Society; in the Jaguar this is very small, perhaps an inch, or nearly so, in size to the Jaguar, the distance is reduced to an incon siderable space, an inch, or an inch and a half, according as the tongue is more or less protruded. In addition to this it is worthy of observation that the circumference of the larynx in the Puma is also very inconsiderable; compare, for example, the larynx of the Jaguar with that of the present animal, both natives of the wilds of the American continent. In the Jaguar we find a larynx indicating, from its internal magnitude, that generally its lower scale is covered by the voice; whereas in the Puma, if we take either its diameter, or its distance from the termination of the palate and base of the tongue, we are led to expect neither the roar of the Lion nor the growl of the Jaguar, but the shrill tones of an animal, ferocious indeed, but of all others of all, perhaps the most stealthy and insidious.' Mr. Martin stated that he thought that he had observed a kind of mutual correspondence between the voice and the habits of animals, and, in offering a few observations on that point on a future occasion.

**Description.—Adult Male.** No mane. Silvery fawn above, sometimes reddish, the tawny hairs of the upper parts whitish at the tips; nearly white beneath, and on the inside of the limbs, whitish on the throat, chin, and to the tip. Head black and gray irregularly mixed; ears on the outside, and particularly at their base, sides of the muzzle whence the whiskers spring, and end of the tail (which is no tuft) black. Longness from nose to tail about four feet; tail shorter than that.

**Female** coloured like the male. Head small when compared with his.

**Young.**—Back marked with three chains of spots, which are generally of a blackish brown; dispersed spots or markings on the neck, and the under parts; these markings increase in depth with age, and are more obscure, till they are at last lost in the uniform colour. A specimen of a young Puma exhibited at a meeting of the Zoological Society in 1831 was, like the young of the other species of Felidae, spotted, and this being the case, perhaps the most stealthy and insidious. Mr. Martin stated that he thought that he had observed a kind of mutual correspondence between the voice and the habits of animals, and, in offering a few observations on that point on a future occasion.

**Geographical Distribution.**—North and South America.

It is reasonable to suppose that the Puma has been found from Canada to Patagonia, with an extensive range on the east and west, but its geographical area has been very much diminished, and is daily becoming more and more contracted before that civilization which is in our own time extinguishing more species than one. Mr. Washington Irving ('Astoria') mentions it as being about the mouth of the Columbia River.

**Habits, Chase, &c.—Lawson (Carolina) gives the following characteristic account of the Puma.** The Panther is of the cat's kind; about the size of a greyhound, of a reddish colour, the same as a Lion. He climbs trees with the greatest agility imaginable, is very strong limbed, catching a piece of meat from any creature he strikes at. His tail is exceeding long, his eyes look very fierce, and lively, are large, and of a greyish colour; his cry is
animal has had to deal with one hunter only the conse-
quences have been sometimes fatal to the latter.

Cuvier remarks, that all it would appear that this animal
extends, or did extend, from California to Patagonia,
has been careful in his researches to discover whether there
were not many species, or at least varieties, in this great
extent of country; the conclusion at which he arrived was,
that one species only existed.

He remarks must bear in mind that there is another cat
of a uniform colour, Felis unicolor, Trall, which is said to
inhabit the forests of Demerara and is one half less than
Puma. The Black Cougui, Felis discolor, is allowed by
some zoologists and rejected by others.

Sir William Jardine describes as the Black Puma an
animal about 32 inches long, without including its tail
which is about 13, and of which he gives a figure taken
from a specimen brought in a merchant vessel to Greenock.
He gives as synonyms El Negro of D'Azara and The Black
Cat of America (Griffith's Synopsis), both with a note of
interrogation. Sir William adopts Puma as a genus, and
gives the following species:—P. concolor; P. nigra; P. Egra;
P. Pujeros; and P. Pujeros chalchbeta. Fossil Lions.

Remains of the Felis Sputra of Goldfuss, Hihlhlmenor, or
Lion of the caves, have been found in the caverns of Franco-
nia, &c. For an account of the four great fossil cats, some
as large as the Lion, enumerated by Professor Kaup from
the Eppelesheim sand, see Felide, vol. x., p. 224, and for a
detailed list of fossil cats see that article and Tigcrs.

LIP.

LIPARI ISLANDS, the antic Aeolli Insulae, or Lip-
parian Islands, are a group of small islands, situated be-
tween Calabria and the northern coast of Sicily, and be-
tween 36° 28' and 38° 50' N. lat. and 14° 10' and 15° 13' E.
long. They are mentioned by the ancient geographers as
seven in number. Stromboli (now Stromboli), so called
from its round form; Lipara, now Lipari; Hierro, or Vulc-
ana, now Vulcano; Diodyme, now Saline; Phenoeodos
or Lipare; and Manaro, or Malaprica, which some think is the present uninhabited rock called
Lisciaiana, while others suppose it to be the inhabited
island of Panarea. There are also smaller islands,
or rather rocks, such as Lascana, Basiluzza, &c., which
lie in the same group, but are uninhabited and barren.
The principal islands are ranged as follows:—1. Stromboli,
the most northern and the nearest to Calabria, is about
40 miles west of the Gulf of Sant' Eufemia; it consists
of a conical mountain nearly 3000 feet high, which is a
constantly burning volcano; and, besides the cultivated
and seed, are derived from one, and are cultivated by
and inhabited by about 300 people. The island is about
12 miles in cir-
cuit. The flames of the crater are a constant light to the
section in that sea. 2. Panaria, about 10 miles south-west of Stomboli, is an extinct volcano, the crater of which slopes on one side to the sea-shore; the bottom or funnel of it is cultivated by a few individuals who are also fishermen.

3. Lipari, about five miles south-west of Panaria, is the largest and most important island in the group, is a bishop's see, and the residence of a military governor; it is about 20 miles in circumference, and contains about 12,500 inhabitants. It has several mountains with volcanic craters now extinct, though they emitted flames in the time of Strabo: it also contains the entire group of mountains, and volcanos, lava, obsidian, and other volcanic products. The land, which is very fertile, produces cotton, olives, and grapes, from which a delicious sweet meal wine is made, called Malvasia di Lipari, which, as well as dried raisins, forms the principal exports from the island.

The town of Lipari, which has a harbour, is on the eastern coast of the island; it contains a castle, several churches, and some remains of antiquity. Lipari is said to have been captured by Hannibal from Cnossus; it was afterwards occupied by the Carthaginians, and became an important station for their fleets during their occupation of Sicily. During the first Punic war it came into possession of the Romans. It was ravaged by Khaire Eddin Barbarossa in the year 1184, and a few years later by the Saracens; it was captured by the Venetians and returned to the Romans by an exchange of subjects into slavery. 4. Two miles south of Lipari is Vulcano, with a crater, not quite extinct, which emits smoke; the island is barren and deserted. Strabo mentions three volcanic vents which might be considered as so many different islands. 5. Four miles north-west of Lipari is the island of Salina, 16 miles in circumference, with several villages, and about 4000 inhabitants. It consists of two mountains separated by a deep valley which runs from north to south, and between which the sea has the appearance of being divided into two islands, which is the origin of its name Dilyme, or double. The valley is extremely fertile in wine, fruit, pulse, &c.

6. Ten miles west of Lipari is Filicudi, an island of volcanic origin, with a few hundred inhabitants; it produces corn, fruits, and wine. 7. About eight miles west of Filicudi is the small island Alicudi, the most western of the Lipari group; it is hilly and not very productive, has some pasture for cattle, and is inhabited by the hereditary possessors of extensive countries. Bornhard von der Lippe obtained in 1127 the town of Lemgo from the emperor Lotharius; and he and his brother Hermann are mentioned for the first time with the title Von der Lippe in a document of the year 1149, and Bernard II., his son, a friend of Henry the Lion, appeared with a numerous retinue of well armed knights at the diet held at Mainz by the emperor Frederic I. In 1184 Bernard III., obtained the lordship of Rheeda by marriage in 1230. His grandson Simon became mayor of Lemgo, was confirmed in his county rights by Pope Nicholas IV. in 1290, and established in 1368 the Pachum Pacis, by which the eldest son only was to reign. Bernard VIII., who died in 1563, was the first who took the title of Count von der Lippe. His son Simon VI. is the immediate founder of the house of Lippe, and his possesions were among his three sons, of whom Simon VII. founded the line of Lippe, Otto (Otho) that of Brake, and Philip that of Bückeburg, or Schaumburg. The line of Brake becoming extinct in 1769, on the death of Louis Felix, and of Lippe-Detmold, with possession of the county, without regard to the rights of Bückeburg, but the imperial Aulic council, by judgments passed in 1734 and 1737, assigned half of the county to Schaumburg Lippe, and the two counties concluded a convention in 1737.

LIPPE DETMOLD, consisting of the counties of Lippe and Sternberg, and part of that of Schwalmberg, forms a compact territory situated between 51° 45' and 52° 10' N. lat., and 8° 34' and 9° 20' E. long. It is bounded on the north-east by Schaumburg (more properly Schauenburg), belonging to Hanze Cassel; on the east by Calenberg (Hanover) and the county of Pyrmont; and on the north-east, south-east, south, and west by the Prussian province of Westphalia. The small bailiwick of Lipperode, with the town of Lippsstadt (half only of which belongs to Lippe Detmold, and the other half to Prussia), lies detached, surrounded by Westphalia. The extreme north-western part of Westphalia, crosses the circle of Paderborn under the name of the Egg, and enters Lippe Detmold at Horn, whence it extends into the county of Ravensberg. The Lippe, here called the Lippe-Westfalen (i.e., Lippe in the north), contains in the county three running parallel to each other from south-east to north-west, of which the first bounds the tract called the Senner Heath; the central one, which is the highest, contains the celebrated Extersteiine, which are a group of salt-springs rising from the earth; it is supposed that the ancient German priests performed their ceremonies by moonlight; and the third is turned towards the valley of the Werra. The Lippe divides the valleys of the Rhine and the Weser, the streams on the right bank of the Lippe flowing into the Lippe, and the branch of the Weser, the only navigable river, just touches the northern frontier of the county for a short distance, and receives the Emmer, the Exter, the other branches of the Weser, the Sennel, and the Ems at the foot of the Stapelberg, a branch of the Oning, crosses the Senner Heath, and soon enters the province of Westphalia. The Lippe merely touches the bailiwick of Lipperode and the town of Lippsstadt. Vast forests are the principal feature of the county on the lower part of the mountains, while on the slopes there is the finest arable land. The climate is temperate but not pleasant; the atmosphere is frequently loaded with fogs and vapours; the winter is cold and wet; the summer, especially in the south, is very hot. The natural productions are corn, flax, hemp, potatoes, rapeseed, garden vegetables, and timber. The inhabitants have the common domestic animals, small four-footed game, poultry, feathered game, fish, and bees. The mineral products are plaster of Paris, lime, clay, and chalk. The annual export of timber, at 36,000 bushels of salt are annually obtained. The staple productions are flax and timber, of which large quantities are exported. The breed of horned cattle is good, and sufficient for home consumption, but the county has been much increased and improved of late years. Swine and goats are numerous. The horses bred on the Senner Heath are hardy and spirited, and are esteemed some of the best saddle-horses in Germany. There are no manufactures of any importance. Thread, coarse yarn, and linen are made in some parts, chiefly by the peasantry after their labours in the field are concluded; there are likewise several tanneries and brandy distilleries, two glass-houses, five paper-mills, and many oil-mills and saw-mills. The exports, besides flax and timber, are some cattle, corn, and, and Meer-schaum tobacco-pipes manufactured at Lemgo.

The religion of the prince and the great majority of the inhabitants is Calvinism; but the inhabitants of Lemgo and Lippe-Detmold, who are almost entirely of the Protestant faith. All about 3460, are Luthers, and there are in the principality about 1600 Roman Catholics. The government is monarchical, with an assembly of estates consisting of 21 members, which, according to the constitution of 1819, includes the assembly of representatives of the county. The government is conducted by the Count von der Lippe, who, besides being regent for his son's minority, has much more extensive powers than any other representative assembly in Germany. The public revenue is 490,000 florins. The contingent to the army of the German confederation is 650 men, and the annual military draft 250. From the town of Lippe-Detmold, with Schaumburg-Lippe, Reuss, Hohenzollern, Liechtenstein, and Waldeck, lies the sixteenth vote in the diet, and in the full council one vote of its own.

Detmold, the capital town on the Werra, consists of the old and new parts, of which the latter is very pleasant, and has some delightful public walks and gardens.
chief buildings are the palace, the gymnasium, and the theatre. There is a gymnasium, a seminary for schoolmasters, a school of industry, a Bible society, a society for the promotion of Christianity among the Jews, an hospital, &c. The number of the inhabitants is 25,000. Longed with subterranean gates, has 4000 inhabitants, who carry on various manufactures, especially of woolen, linen, leather, and tobacco-pipes, of which the last is very considerable. The town has one Lutheran and a Catholic church, a gymnasium, and an orphan-house.

Schauenburg-Lippe consists of four bailiwicks in the county of Schauenburg and three in the county of Lippe, which are surrounded by Hanover, the Hessian part of Schauenburg, Lippe Detmold, and Westphalia. It is 210 square miles in extent. The population is 25,000, who profess the Roman religion (except 3500 Calvinists in Alverdessa and Blomberg, and 100 Roman Catholics. The country, which is in general mountainous, has no rivers except small affluent of the Weser: the Stein-hude lake is about 3 miles long, 24 broad, and at most 6 feet deep. The principal products are hemp, potatoes, flax, fruit, timber, horned cattle, sheep, swine, goats, horses, poultry, game, and fish. Its mineral products are coal, stone, and lime. There are no manufactures, except some woolen goods, are carried on. The revenue of the province is estimated at 251,500 florins (about 21,000l. sterling). The country has had over since 1816 an assembly of estates, which consists of 13 members, and meets annually.

The chief town and residence of the prince is Bückeburg on the Lippe, and in the 16th century a part of the Lippe Provinz.

There is a Lutheran and a Calvinist church, a gymnasium, an orphan-house, &c., but no remarkable buildings. Stadthagen, a walled town with three gates, has 1485 inhabitants. There are in the town a palace, which is the usual residence of the princes of Bückeburg, a high school, and public institutions; and the church, with the splendid mausoleum erected by Prince Ernest. In the neighbourhood there are coal-mines and considerable stone-quarries. Schauenburg-Lippe, as a member of the German confederation, has had from the general council of the empire the right of sending an official and part of the sixteenth vote with Lippe Detmold, &c. Its contingent is 240 men, and its payment to the treasury 250 florins.

(Von Donop, Hist. Geogr. Beschreibung der Lippezechen Lande; Stein, Geogr. Lexicon; Hassel, Handbuch der Europäischen Länder, 1844.)

LIPIUS, JUSTUS, was born at Tague, a village between Brussels and Louvain, the 18th of October, 1547. He was educated at Brussels, Cologne, and Louvain; and at the age of 20 he was elected Privat-Dozent and one of the principal Roman authors; this work was so highly esteemed by his learned contemporaries, that he was received with distinguished honour at Rome, whither he went in the same year, by the Cardinal Granvelle and Pope Pius V. After remaining two years at Rome he was appointed professor of history at Jena, where he resided till 1574. In 1579 he was appointed professor of history at Leyden, and took an active part in the ecclesiastical disputes of the times. During his residence at this place he professed the Reformed religion, but on quitting Leyden in 1591 he returned to the Roman Catholic church, in which he had been brought up, and published two treatises in defence of the worship of saints and their miraculous powers (Dasa Virgo Hallowes, 1604; Dasa Virgo Schemienates, 1605). He was afterwards appointed professor of history in Louvain, where he remained till his death, March 24, 1606.

The works of Lipius, which are very numerous, were collected and published at Antwerp in 1637; and also at Wurzburg in 1675. They consist of notes on the Latin authors, of which the commended by Tacitus, and are the most useful; treatises on moral and political philosophy, and discursive on Roman antiquities and historical subjects.

LIPPA, Illiger's name for the Tautilis Mammot of Porson and Huxley, p. 417. In the same work, the species is marked as doubtful by Dr. Fischer, as far as the Heat. Hyacinthina.

LIPPIUS, a generic name given by Goldfuss to a species of Wombat (Phascolartos), marked as doubtful by Dr. Fischer.

LIQUATION, or ELIQUATION, a process by which silver is sometimes separated from copper; it is a cold proc-
Augusta, tolerably wide, and nearly half a mile in length, containing the best shops in Lisbon, especially those of the goldsmiths, silversmiths, and jewelers. These streets are raised at right angles by other streets, and they terminate on the river side in a handsome square called Praça de Comércio, one of those which form the Tagus, and on the other sides by the arsenal, the custom-house, the exchange, royal library, and other public buildings. This square is adorned with a bronze statue of king Joseph I. At the opposite or north end of the above-mentioned streets are two towers, the Conde das Alcântaras and the Praça do Rocio, the latter of which is bounded on one side by the convent of S. Dominic and the massive buildings formerly occupied by the Inquisition. Further north going towards the country is the Passeio Publico, or promenade, which is one of the most extensive and very inferior to the public gardens of other capitals.

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

To the southward they new streets the town rises on the steep declivity of a succession of hills, with a few good streets and open places here and there, especially on the river side, the rest of the streets being crooked, narrow, and filthy. Here and there are massive buildings, chiefly convents and other religious foundations. The town extends from the eastern extremity of the town the length in a straight line as between three and four miles, not reckoning the sinuosities of the ground; the depth of the town from the Tagus island varies from one mile to a mile and a half, not including the natural harbors and basins in January, among the approaches to the town. The whole of the area thus described is however far from being thickly covered with buildings; many parts are occupied by extensive gardens, plantations, the naked steep declivities of the hills, and by rains and rubbish. The district of Buenos Ayres, along the slope of the western hill, is the least densely built, and contains many pleasant and healthy residences with gardens, which are mostly occupied by foreigners. West of the bridge of Alcantara a line of streets parallel to the Tagus forms the north-west at a part of the town and royal residence of Belem. [BELEM.]

The Tagus from Belem up to the western end of Lisbon is little more than one mile in length, but opposite the centre of Lisbon it widens considerably, the left or southern bank is hilly, and sometimes even mountainous, with forests and woods, and forming a wide bay or reach about five or six miles in breadth, and extending far to the north-east. This bay gives to the river in front of Lisbon a sea-like appearance, which adds to the effect of the scenery. The southern bank, which is hilly above Almada, becomes lower high up the river, and is swampy at low water; it is however studded with small towns and villages, such as Aldea Gallego, Monte, Alhosvedos, Lavradio, Barreiro, Coína, Sojal, Gobael, Montelva, and Almada. These places keep a considerable commerce, being inhabited by the Tagus, and containing houses, wine, &c., besides being the medium of intercourse between the capital and the southern provinces of the kingdom, and also with Spain by the post-road of Belem.

The broad Tagus gives to Lisbon a most splendid and sea harbour, which might contain all the fleets of Europa. The largest men of war can anchor close to Lisbon. The navigation of the river is defended by two forts, St. Julian on the left bank, and a small island opposite, which is joined to the southern bank by a rocky and unpassable rock; the soil consists of basalt, covered here and there with limestone: the basalt on which Lisbon is built extends to the north-west towards the market-town of Beiras already mentioned, and thence to the north as far as the Tagus near Belem. (Link, Travels in Portugal.) Beyond Beiras, running north-east to south-west and terminating on the sea at Cabo de Roca, rises a high range of mountains full of peaks, consisting of granite, partly covered...
with limestone. The southerly declivity of these mountains towards Lisbon is gentle, and it is on the opposite or northern side that the delightful quintas and shady groves are situated which afford a summer residence to the wealthy inhabitants of Lisbon. [Contra.]

Leaving Lisbon for the north towards Torres Vedras there is a succession of fine views and scenery, such as Campo Grande, Carnide, Lumiar, Loures, &c., extending for several miles almost without interruption. The same occurs in a north-east direction along the banks of the Tagus towards Sá-cavem.

The population of Lisbon is reckoned at 560,000 inhabitants. Its trade, though much diminished since the loss of Brazil, is still considerable. It exports wines, fruits, and oil; and it imports corn, salt fish, salt butter, cheese, timber, iron, lead, tin, copper, coal, tar, and all sorts of foreign manufactures, with which it supplies the whole southern part of the kingdom. Lisbon has some manufactories of silks, paper, soap, and leather; its goldsmiths and jewellers are very expert; and there are also sugar refiners and potteries. We ought to observe here that the land and want of industry of the Portuguese have been much exaggerated by travellers.

The scientific and literary institutions are:- 1. The Royal Academy of Sciences, founded during the reign of Queen Maria I., part of the latter; it is a model of respectability, and has published very interesting memoirs on the history, laws, and economy of Portugal, as well as upon its natural history and that of its colonies. 2. The College of the Nobles, a very handsome building, founded by the Infanta, widow of Philip IV., in 1659. The Royal Academy of Sciences, founded in 1779, or School of Navigation and Ship-building, with the observatory attached to it. 4. The Royal Academy of Artillery and Engineers, founded in 1790. 5. The Royal Military College. 6. The School of Music. 7. The National Print and Art Gallery, and Natural History Museum, at the royal residence of Ajuda, near Belem. 8. The Royal Library and that of the Necessaries. 9. The Royal Schools of Vicente de Fora, where philosophy, geometry, physics, and the ancient languages are taught. 10. The Royal Institute of Drawing and Civil Architecture. There are also primary or elementary schools in the various districts of the city.

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

The inhabitants of Lisbon, though mostly inclined to bigamists, live in a very sober manner; towards the evening they are constantly in society with the English and other Protestants, and have not that horror of heretics which is exhibited by the inhabitants of the inland parts of Spain.

LISBON, a parliamentary borough town, not corporate, situated partly in the barony of Upper Peres, and partly in the barony of Upper Castleherg, and county of Down, in Ireland. The parish, called likewise Blarion, extends also into the barony of Lower Iveragh, in the county of Down. The town is 73 Irish or 53 statute miles from Dublin, and 2 from the port of Dunmore East. The boundaries of the borough, as settled by 2 and 3 Will. IV., c. 89, comprise 1325 statute acres.

This town took its origin from the erection of a fortified mansion, about 1610, by Lord Falken Conway, to whom a large part of the hill called Duddagh belonged. These grants were enlarged and confirmed to Viscount Conway in the succeeding reign, during which number of English and Welsh settlers in the town and neighbourhood greatly increased. The town was at this time called Llangarrow, and soon became a considerable place, as it appears by the gallant and successful defence which it made against the Irish under O'Neill on the 28th November, 1641. The town and castle continued in the hands of the Royalists until 1654, when Sir Charles Coote took possession of the place for the parliament. On the Restoration, King Charles II., in consideration of the loyalty and services of the inhabitants, granted them a patent, dated 27th October, 1662, by which the church of Lisburn was erected into a cathedral for the united diocese of Down and Connor, and the inhabitants of the borough were empowered to return two members to the Irish parliament.

On the revolution of the Edict of Nantes, Lisburn became the residence of a number of French refugees, who introduced the linen and damask manufacture, from which much of the succeeding prosperity of the place has arisen. There was a castle in the town, and the chief part of the town. The castle gardens were then turned into a public promenade, and the town rebuilt in a more substantial and handsome manner. During the prosperous period which intervened, the merchants and inhabitants of the Irish town of Lisburn increased rapidly. Since that time the town has rather declined, owing probably to the superior facilities for carrying on the linen and cotton-spinning trades possessed by the neighbouring seaport of Belfast.

The most noted of Lisburn is the garrison, or returning officer in elections for the borough, which, since the Union, is represented in the imperial parliament by one member.

The number of electors in March, 1836, was 134. The right of election by act 2 and 3 Will. IV., c. 89, is vested in all male householders.

The appearance of Lisburn is very pleasing. It is situated on a gently rising ground, on the north-western or Antrim side of the Lagan. The market-house occupies an open space in the centre of the town, where three principal squares are united, and from which the market is dispersed in all directions. 992 houses within the borough, 674 are roofed with slate, which is an unusually large proportion of that class of houses in an Irish inland town. The manor court-house, formerly a chapel for the French in the town, is now the seat of the collation, and the seat of the rector. The great church, with its solid square tower, and lofty cupola. Near the market-house is the church, an elegant edifice with a lofty spire, on each side of which the two streets leading towards Belfast and Old Bridge over the Lagan diverge. The castle gardens are included between them, and make a very handsome walk. The town command a fine prospect. The houses in the main street are chiefly built of English brick, and have a very elegant appearance. Those in the opposite or western end of the town are of an inferior description. 656 houses are within the corporation, and the houses are variously built, and the majority of them are modern, many of them being built with imitation brick, and paved, and these are much admired for the neatness of their buildings. There are also three Presbyterian meeting-houses, one Methodist ditto, and one Roman Catholic chapel.

Lisburn is well paved, and is amply supplied with water by conduits to the houses. The provisions of the Light-house have not been most improved. The town is well supplied with coal, and the market is considerable, and is frequented in the town discharge the duties of municipal police. On an inland in the Lagan, in the eastern suburbs, are extensive "triol" works. Some of the largest bleach-greeners for linen in Ireland are in the vicinity; and in the town, on the banks of the Lagan, the bleachers work in a factory, much celebrated for the beauty of its fabrics. A navigation extends from the town by the river Lagan to the sea at Belfast, and by the river and a canal to Loch Nacagh. A railroad is now nearly completed between Belfast and Lisburn, which is intended as the commencement of a line through Armagh to Dublin. This is the second work of the kind hitherto undertaken in Ireland.

In 1812 the number of houses in the borough was 810, and the estimated number of inhabitants was 5,172. In 1821 the number of houses was 3,992, and of inhabitants 5,745. In 1842 there were in the parish of Lisburn seven day-schools, educating 756 males and 548 females. Of these schools two were supported by the association for the diffusion of useful knowledge, and five were supported by subscribers. The county infirmary is at Lisburn, and there are almshouses for fourteen females, supported by bequests, amounting in all to 27,504.

LISCOV, CHRISTIAN LUDWIG, born at Wittenberg, 1701, although very little known in this country, still ranks high in Germany for his satirical writings, which, in their caustic irony, show their author to have had a congenital turn of mind with Swift. Very few particulars of his life have been recorded, further than that about the year 1729 he was private tutor at Lisbeck, where a pedant named Sievers was the first who fell under the castigation of his pen. After this he became private secretary to William, Prince of \[\text{unknown}\]
Gehemen von Blome, from which time nothing can be traced respecting him till he entered the service of von Hennecker at Dresden. Under this accomplished and generous patron he might have passed his days in tranquility, but for the love of home and native scenery which possessed him. Having offended the English minister at that court by some sarcasms, he drew upon himself the resentment of the all-powerful Count Bruhl, who caused him to be sent as an ambassador to Zollern, where he died shortly after October 30, 1760. Some have however questioned the truth of his having been in confinement.

Posterity has been more just to Liscew’s merits than were his contemporaries. His satire was directed only against bad society; he wrote the most disinterested and personal, certainly impartial, and without any respect to persons, for a powerful offender was in his eyes no more than the meanest. That he possessed any ordinary ability for politics may be conceived when we find Pott, the editor of a several times the writer, saying that in France Bruhl listened to Liscew’s advice, Germany would have been spared the Seven Years’ War. The first complete edition of his works was published by Krieger Mühler in 3 vols. 8vo., Berlin, 1806. Of several of these pieces titles will be given, viz. The Edifice, the Works, and the establishment. On the Excellence and Usefulness of Bad Writers; On the Uselessness of Good Works towards Salvation; and the Inaugural Discourse of the learned J. E. P., &c. at the Academy of Small Buildings. The last two are Liscew’s Apology for his satirical attacks most admirable; and it may be remarked, that although satire seldom reforms those who are the immediate objects, it is nevertheless highly beneficial with respect to many who were not of the old club. A few extracts from these works the present writer has thought proper to give.

LISLE, a town in France, capital of an arrondissement in the department of Calvados, 93 miles west by north of Paris in a straight line, or 106 miles by the road through Erreux. This town existed at the time of the Roman Conquest. It was called Nocemagus, and subsequently took the name of Lexovii, from the people to whom it belonged; and from this name the modern Lisieux is derived. It was pillaged by the Normans in a.d. 877; burned by the Bretons in a.d. 1216; and taken and burned in 1557 by the Protestant soldiers of the house of Guise. The palace, with its gardens, the seminary for the priesthood, and the great hospital, is in the religious dimensions of the sixteenth century. It was before the Revolution the seat of a bishopric; the bishop was a suffragan of the archbishop of Rouen. The town stands on the right or east bank of the Touques at the junction of the Orbec. The old walls have been lately replaced by some tolerably handsome buildings and a promenade. The streets of the town are tolerably wide; the houses are mostly of wood. The chief public buildings are the town hall, with little ornament, and a square palace with its gardens, the seminary for the priest, and the great hospital. The population in 1831 was 10,257; in 1836 it was 11,473, showing an increase in five years of 1,216, or above 10 per cent. The manufactures of the place are chiefly of broad-cloth, flannel, and other woollen fabrics; woollen and cotton yarn, and cotton goods; horse-clothes of wool and hair; leather and brandy. There are bleaching and dyeing establishments. The trade, which is chiefly in the manufactures of the town, is promoted by the navigation of the Touques, which commences at Lisieux. There are six yearly fairs. Besides the public institutions already noticed, there are several others, judicial or fiscal; also a high school and a theatre.

LISLE, a manor in the county of Suffolk, containing 348 square miles, and had in 1831 a population of 68,716, in 1836 of 98,444. It is subdivided into six cantons and 131 communes.

Among the former bishops of Lisieux, Jean Hennuyer was of melancholy mention: at the time of the massacre of St. Bartholomew he preserved the Protestants of his diocese. His kindness won over many of them to the Catholic faith.

LITTLE, WALTER, LESKEARD, or LESKERET, a parish, corporate town, and parliamentary borough, in the hundred of West and county of Cornwall, distant 218 miles west-south-west from London. The assessmentable Duchy Manor of Leskard includes the whole parish and borough. The town and its vicinities are not remarkable. The castle of Richard, king of the Romans and earl of Cornwall, brother of Henry III, granted in the year 1240; the last seat of the 29th Elizabeth, and dated 26th July, 1587. The council consists of 4 aldermen, one of whom is the mayor, and 12 councillors. The revenue of the corporation for the year ending October, 1832, was 442l., and its expenditure during the same period was 242l.; but in previous years the expenditure had considerably exceeded the revenue. The town, which is mainly built, stands partly in a hollow and partly upon rocky heights, which give to the streets an appearance of great irregularity. Of late years the town has been much improved, and several persons, possessed of large properties in the town, have, by their improvements, attached it with excellent houses. The chief public building is the town-hall, erected about the beginning of the last century, at the expense of one of the members of the borough; it is a building, 24 stairs in height, and built on granite columns. Leskard still continues to be a place of considerable trade, and has an excellent market. It has been greatly benefited by the recent improvement of the roads in that part of Cornwall. The living is a vicarage in the diocese of Exeter, possessing an average net income of 301l., the rector having been appropriated to the priory of Launceston. In 1304 the bishop of Exeter excommunicated the inhabitants of Leskard, and put their church under an interdict, for refusing to pay titles in kind on the ground of a composition entered into between Earl Richard and the prior. (Par. Roll, 312.) An attempt was afterwards made to appropriate the vicarage also. (P.R. 595.) The population of the borough in 1831 was 2853 and that of the entire parish 4042; the parochial schools for the inhabitants now amount to 925, amounting to 873l. Before the passing of the Reform Bill, the corporation of Leskard had returned two members to parliament continuously from the reign of Edward I. The borough, which consists of the parish of Leskard and such parts of the parishes of Liskeard and Coldharbour to which it was attached by the ancient charter, now returns one member. For the history of Leskard, as part of the duchy of Cornwall, see Manning's Exchequer Practice, 2nd ed., 374, 380; 1, 2, 3, and 4 ann. & Ryl. Rep. 141-2, 153, 177, 471-2; 2 Ventris' Rep., 343. (Parliamentary Papers; Gilbert's Parochial History of Cornwall.)

LISLE, or LISLE. [VAUCSELIER.]

LISLE, WILLIAM DE, born at Paris 28th February, 1616, was the eldest son of Claude Delisle, a geographer and historian, who has left proofs of a decided predilection for geographical pursuits.

Before the time of Delisle, the principal maps of authority were those of Nicholas Sanson, to whom geography is under many obligations; but these maps were excessively erroneous from the want of astronomical observations, although it does not appear that the author had fully availed himself of the few observations which really existed. After the death of Sanson, his sons continued to reproduce his maps, with little or no improvement; and the more recent accounts of travellers and the observations of astronomers were greatly at variance with many of their positions. For this reason they were repeatedly censured both by La Hire and Dominic Cassini, to whom however they seem to have paid little regard. At length, in 1696, Cassini drew a maps upon the pavement of the hall of the Paris Observatory, wherein he marked the position of 39 places according to their observed latitude and longitude, and thus exhibited the magnitude of the errors which vitiates the existing maps, and at the same time pointed out the means of effecting their improvement. Still however the geographical positions of by far the greater number of places could only be inferred from antient itineraries, and often confused by the errors of the modern travellers, while the coast-lines had for the most part to be determined from a tedious comparison of the log-books of seamen. It is obvious that for a task of this description, in addition to the requisite scientific instruction, it is necessary to be acquainted with the languages of the countries whose positions are to be determined, and to be well versed in the history and customs of the nations of different nations, a problem of very considerable difficulty; but above all he must exercise a highly critical judgment in according each statement a degree of confidence duly proportioned to its nature. These considerations were eminently favorable to the success of the undertaking, although he left ample room for the display of perhaps greater abilities in his successor M. d'Anville, there is no doubt that his own labors contributed powerfully to the
improvement and extension of geographical knowledge. Four years after Cassini had exposed the enormous inaccuracies of the then existing maps, Delisle published (1707) four maps of Europe, Asia, Africa, and America, together with one of the globe about a foot in diameter, the other of the terrestrial, the other of the celestial sphere. In those latter maps it was intended to support the earth and its inhabitants. In 1720, the connection between the Atlantic Ocean and the Indian Ocean was still supposed to have been by the Strait of Gibraltar. The coast of Africa was not limited to 860 leagues (3.925 miles), but to more than five-thousands of its actual length. The line of longitude between the eastern and western boundaries of Africa was in like manner lessened by 25 degrees, and many other inaccuracies, which led to considerable confusion among the maps. The corrected maps of Delisle were introduced for the first time in these maps.

The reputation and profit which Delisle derived from these publications excelled the cupidit of a man named Nolin, who, though distinguished by the title of geographer royal, did not hesitate to publish pirated copies of Delisle's maps, in which he purposely introduced a few slight errors, in the hope of thereby evading detection; and when taxed with the fraud, he retorted by ascribing the plagiarism wholly to Delisle. This in consequence obliged the instrumentality of legal proceedings, less with a view to protect his interest than to clear his character of an unjust imputation. The result of the prosecution, protracted during six years, was in favour of Delisle, authorising him to seize and destroy the offending map of the defendant, a permission which he partially availed of.

In 1702 he was elected a member of the Royal Academy, and shortly afterwards was appointed geographical tutor to Louis XV., who conferred upon him the title of chief preceptor for the sciences, a title which did not prove to exist, and which has since been conferred only upon M. d'Anville.

The maps of Delisle, in illustration of particular countries and of particular periods of history, now succeeded each other in rapid succession. Among them, the edition of his planisphere, published in 1724, is deserving of particular mention, as it shows the progress which had been made in geography before D'Anville had contributed considerably to its improvement. The latest edition of this map, which is that of 1769, published by D'Anville, in 2 vols. fol., and comprising 138 sheets. Besides this he has left an atlas of ancient geography and an atlas of France divided into provinces. Such was his fame that most authors of respectability have attended his history on some connection or another, and his attachment to his own country would not permit him to accept their patronage or assistance. Peter the Great in particular was in the habit of paying him frequent visits during his adjournment at Paris, partly to give and partly to derive information respecting his own territories.

Delisle died at Paris, 25th of January, 1729. In the Transactions of the Royal Academy are printed the following memoir bearing his name:

"Observations on the Variation of the Needle with reference to Halley's Map," 1710; "Justification of the Antients in matters of Geography," 1714; "On the Longitude of the Straits of Magellan," 1716; "Geographical Determinations and Observations of the different parts of the Earth," 1714; "G. Delisle's Description of the Situation and Extent of the Countries traversed by Cyrus in his Expedition against his brother Artaxerxes, and of those traversed by the ten thousand Greeks in their retreat," 1721; "Remarks upon the Map of the Caspian Sea, sent to the King of France."" 1731; "Comparison of the extent of London and Paris, and some other cities both ancient and modern," 1725; "On the Longitude of the mouth of the River Mississippi," 1726. Besides the foregoing, Delisle published a work entitled "An Introduction to Geography," wherein he purposely giving an account of the alterations which he had introduced; but he died before its completion. The plan of the work was however published posthumously, by P. Pluche, in a small volume published by that gentleman in 1731.

(L'Observatoire, Oeuvres Diverses, la Haye, 1729, tom. iii.; Biographie Universelle; Quérard's Dictionnaire Bibliographique.)

LISTMORE, a bishop's see, late in the archiepiscopal province of Cashel, and now in that of Dublin, in Ireland. It includes portions of the counties of Waterford and Tipperary, and extends 37 statute miles by 38. The chapter consists of a dean, precentor, chancellor, treasurer, archdeacon, and 8 prebendaries. In 1792 the diocese was divided into 37 parishes, constituting 35 benefices, and having 12 churches. In 1834 the numbers were: parishes, 35; benefices, 43; churches of the Establishment, 35; other churches, 8; schools, 24; poor rate, £180; an almonry and dispensary; and Roman Catholic churches, 62. In the latter year the total population of the diocese was 216,236, of whom there were 5970 members of the Established Church, 164 Presbyterians, 382 other Protestant Dissenters, and 1835 Roman Catholics. The cathedral and churches, which respect Lismore stands thirteenth among the 37 dioceses of Ireland. Of the above schools, 12 were, in 1834, in connection with the National Board of Education.

St. Carthage, commonly called Modchuda, of Rathery in Waterford, was consecrated bishop of this see in the year 500, and is mentioned as the founder of the cathedral and school of Lismore, in a.d. 631. Carthusianus, afterwards bishop of Tarentum in Italy, succeeding during his time and that of his predecessor, the school of Lismore was greatly celebrated for the number of its students, and those persons who were formed within its walls were exclusively inhabited by ecclesiastics. Soon after the arrival of the English, the antient see of Ardford was annexed to the diocese; and in the bishopric of Thomas de Reve, a.d. 1258, the sea, so increased, was admitted that of Waterford, and Lismore dedicated to St. Carthage, in 1279, the see of Waterford and Lismore, being void, has been annexed to the united see of Cashel and Emly, and its temporalities are now vested in the Ecclesiastical Communion.

The town of Lismore is situated in the barony of Cashel and Combs, and county of Waterford, on the southern bank of the Blackwater, nearly three miles from the point where that river changes its course from east to south, and meets the canal, which joins it to the River Suir. This town is a hillside built against the foot of a low hill, which overlooks the Blackwater and the seat of the Earl of Blackwater. The Blackwater is navigable for sixty miles from the Blackwater to the tidal estuary of the Blackwater, and from thence to the town, and is a magnificent pile, originally erected by King John in a.d. 1185, and greatly enlarged and strengthened by the Earl of Cork, who stands on the summit of a rocky bank, which is 183 feet from the Blackwater, and at the opposite, western end of the town. Lismore is the property of the Duke of Devonshire, by whom it has been greatly improved of late. The town is also much indebted to the late duke, who built the bridge at a cost of 9,000l. and restored the castle, which had been reduced almost to ruins during the civil wars of the seventeenth century.

Lismore was erected into a borough by charter of James I. and was represented in the Irish parliament by two members. The franchise was abolished at the time of the Union.

The county of Waterford was constituted of three baronies, and the trustees of the late Earl of Cork and Burlington held the same charter, granted in 1613, the borough was incorporated, but the corporation is now defunct. The Blackwater is now partly navigable to within a mile of the town, and a canal has been constructed across the county of Waterford, which lights can now come up as far as the river. There is a small export of grain and flour; and imports are trifling, consisting chiefly of coal and timber from the Low Countries.

In 1831 there were in the town 366 houses and 2237 inhabitants. In 1834 there were in the parish of Lismore 22 day-schools, educating 703 males and 498 females, and these schools two chiefly supported by the Duke of Devonshire, one by an endowment by Lord Cork, and the other by a grant from Sir Richard Musgrave.
in solution, which, being evaporated, hydrate of lithia is left. Lithium is but little known. Davy obtained it from the above described hydrate by means of voltaic electricity, in the same way as he had previously procured potassium and sodium from their respective hydrates. Lithium was found to resemble sodium in its whiteness, but it was oxidized and converted to lithia with such rapidity, that its properties could not be more closely examined.

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

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

- One equivalent of oxygen . . . . 8
- One equivalent of lithium . . . . 6

Equivalent 14

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

- One equivalent of chlorine . . . . 36
- One equivalent of lithium . . . . 6

Equivalent 42

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

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

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

Acids of Lithia come to form salts.

Nitrate of Lithia is obtained by expelling oxygen, and the alkali lithia remains. This salt is very deliquescent; when the solution is gently evaporated, crystals are obtained, which are sometimes needleform and sometimes regular rhombic prisms. Its taste is like that of nitre; it is extremely fusible, and becomes by heat as liquid as water. It is probably composed of-

- One equivalent of nitric acid . . . 54
- One equivalent of lithia . . . . 14

Equivalent 68

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

- One equivalent of carbonic acid . . . 22
- One equivalent of lithia . . . . 14

Equivalent 36

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

Sulphate of Lithia.—This salt is very soluble in water; it has a saline taste without bitterness, and crystallizes only in irregular masses. The air does not act upon it, and, unlike most of the salts of lithia, it is very difficult of fusion. It is composed of-
LIT

Phosphate of Lithia may be obtained by adding phosphoric acid to sulphate of lithia; no precipitate is at first formed, but on adding excess of ammonia an insoluble phosphate of lithia is thrown down: this property enables us to separate lithia from potash and enough quantity of the latter is left for solution. The precipitate is washed and dried, and is the carbonate of lithia.

Character of Lithia and its Salts.—Lithia sets so readily upon platinum, that, according to Berzelius, this property will serve to detect a small quantity in any substance; for when it is heated with soda on platinum foil, the soda dissolves the lithia and the platino-silicate assumed a colour more or less deep according to the quantity of lithia set free. Lithia is distinguished from soda and potash by its greater saturating power, as shown by its lower equivalent number; chloride of lithium is distinguishable from the chlorides of sodium and potassium by its solubility in alcohol, and the solution burns with a red flame. Its salts are not precipitated by chlorides of platinum, as those of potash are; and, unlike both potash and soda, it forms a fusible volatile carbonate and phospate. Lithium is found in some Zouavehays, a generic term proposed by Goldfuss to include Carpyrhylia and Oculina of Lamarck, and adopted by many geological writers in a rather vague sense. Blainville rejects the term, C. A. Edouard Deshayes has recently also—this, and the group of Lithodonta offers many diversities of structure, and lies in strata of various antiquity ("Petrefacta Europae"), especially in the transition and carboniferous limestones.

LITHODOMUS. [MYTH.]—The art by which impressions or prints are obtained by a chemical process from designs made upon a greasy material upon stone. It has therefore been termed chemical printing to distinguish it from all other modes of obtaining impressions, which are mechanical. From an engraver's copper plate, the ink is delivered from the impressions made therein with the graver or etching-needle. An engraving on wood, on the contrary, gives its results from the projecting surface of the block, or those parts which are not cut away by the graver. In the lithographic process, obtained from both these modes, the impressions being obtained (by strict attention to chemical affinity) from a level surface.

There are various styles of lithography, as will presently be seen; but the principle of the art is uniformly the same, being as we have said, based upon those of chemical affinity. The stone best calculated for lithographic purposes is a sort of calcareous slate, found in large quantities on the banks of the Danube in Bavaria, the Apennine limestone, which resembles the German have been found in some parts of Devonshire and Somersetshire, and also in Ireland; but we believe that on all the trials hitherto made, the stones found in this kingdom have contributed to want some of the most essential in this mode of preparation, to keep the granulation therefore almost exclusively used. Even these vary much in quality, all the strata not being equally good; some are too soft, and others are rendered unfit for use by the presence of chalk, flaws and veins, and fossil remains. A good stone is porous yet brittle, of a pale yellowish-drab, and sometimes of a grey neutral tint. The stones split into slabs varying from ½ to 2½ inches in thickness, which are then cut or squared into the different sizes necessary for use, and the face or upper surface of each is made level. In this state the stones are sent to the printer, but for further preparation is yet necessary to fit them for the immediate use of the artist, and they are either grained or polished, according to the nature of work they are intended to receive. The mode of doing a grained stone, as it is called, is this:—A stone, being fixed to a table, has its surface wetted, and some sand sifted over it through a very fine wire sieve. Another stone is laid with its face downwards upon this, and the two are rubbed together with a peculiar motion, to produce the requisite granulation, which is made finer or coarser, to suit the taste or intention of the artist. The stones thus prepared are used for drawings in the chalk manner, or for imitations of those produced with the black lead pencil. Great care is requisite in this mode of preparation, to keep the granulation uniform and the surface free from scratches, the presence of which would otherwise much disfigure the future work.

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

The two principal agents used for making designs, drawings, &c., on stone, are called lithographic chalk and lithographic ink. They are composed of tallow, virginia, or glue, and are made, as much as possible, to remain on the stone after the water has been washed off. The ingredients are in a kind of proportions and with the chalk mixed, and in a dry state, is poured into the mould, and thereby made to adhere to the mass. These are incorporated by a peculiar process of burning in a closely-covered saucepan over a fire, and the whole is ultimately cast into a mould, and receives the form calculated to fit it for use. The ingredients are in such a proportion that the chalk is used as it comes from the mould in a dry state, but the ink is dissolved by rubbing, like Indian ink, in water, and is used in a pen or camel-hair pencil. It will be perceived that it is the presence of this graining material which renders it insoluble in water.

To render the lithographic process intelligible, let it be supposed that the artist now completes a drawing with the chemical chalk just described, upon a grained stone. If, when in this state, a sponge filled with water was passed over the face of the stone, the drawing would wash out. The chalk with which it is made being, as we have seen, soluble in water, by reason of the soap which it contains. Before therefore it is capable of yielding impressions, a weak solution of soap is applied to the stone. The solution neutralizes the alkali or soap contained in the chalk, and renders it insoluble in water. After this the usual course is to float a solution of gum over the whole face of the stone, and when this is removed, if a sponge and water be applied, the ink is not dissolved, but found to be no longer removable, because the chalk with which it is executed is now no longer soluble in water. In this state the work is ready for the printer, who obtains impressions by the following process:

The printer applies with his fingers a few drops of water on the stone, and spread them with a sponge, or a wet, or rather damp, the whole surface equally, the printer finds that the water has been imbibed by the stone only on those parts not occupied by the drawing, which being great to water, applied dry. A roller procured for printing-ink is now passed over the whole stone, which will not even be soiled where it is wet, from the antipathy of oil and water. But the parts occupied by the drawing being as we have seen, dry and greasy, have an affinity for the ink, which therefore more or less attaches itself to the drawing. In this state it is said to be charged, or rolled in. Damped paper is then put over it, and the whole being passed through a press, the printing-ink is pressed from the stone to the paper, and constitutes the impression. By repeating in this manner the operations of damping the stone and rolling in the drawing, an almost unlimited number of impressions may be obtained.

It will be inferred, that, to ensure complete success, great nicety is requisite in the preparation of all the agents employed in this art. Our limits will not allow us to go into details on the modes of manipulation, or the precise composition of the several materials used in making the design, nor on the manner of using, nor the number of materials for drawing, &c., on stone, in any style, are supplied by the different lithographic printers. Those who wish to study or practise the art in its full extent will do well to consult "A Complete Course of Lithography," by M. Raveaut, and "The Elements of Lithography," by M. Raveaut, both translated into English.

Imitations of etchings or pen and ink drawings, &c., executed with the chemical ink upon a polished stone, are prepared in precisely the same manner. Transfer lithography, from the facture of its execution and its great utility, claims especial notice. A paper called "transfer-paper" is used to receive the writing in this mode of lithography. This paper has previously had a liquid gum or a preparation washed over one side of it, which, when dry, constitutes its face, and the writing being performed with the chemical ink already described, rests upon this.
gummy surface, and does not penetrate to the paper beneath. When the writing or drawing done on the transfer-paper is dry, the back of it is wetted slightly but equally with a sponge and water; and the greater being very thin, the gum preparation on the front of it becomes at once partially dissolved. In this state the paper is laid, with its face downwards, on a polished stone, and being passed through a press, the transfer-paper is found strongly and closely adhering to the stone, and the writing is thus transferred from the copper to the stone, and the transfer paper is removed, and, one corner being first raised, it will readily peel off, leaving the gum preparation, and of course also the writing which was above it, attached to the stone. The gum is then washed off with water, and the preparation so produced will not, in any way, impair the stone; as by its means one written despatch can be multiplied at pleasure, without delay on the risk of typographical errors.

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

Thus we see that grease anyhow applied to the stone will yield impressions, but that the character of the impression depends, 1st, on the quality of the grease; 2dly, on the preparation used; 3dly, on the character of the surface of the stone, 4thly, on the manner in which the grease is applied. As illustrations, we refer to the modes already enumerated, in which the application of the chemical preparation in the shape of a solid chalk, of fluid ink, and of pure oil, directly applied to the stone, have been pointed out and the effects arising from each explained. It is the grease therefore which prints, and the lampblack introduced into the lithographic materials is of no other use than to enable the artist to judge of the quantity of grease imparted to the stone. That it does not in the slightest degree interfere with transmitting the effects of pressure, is proved by a curious phenomenon. The design may be (and often is, in the progress of printing) washed out with turpentine, so as to become quite invisible; and a looker-on, unacquainted with the subject, would suppose the stone blank, but slightly defaced; but it is the black only which has disappeared; the grease remains, and on being rolled in again, the drawing re-appears unimjured.

The variation in the quality of the tints, arising from the mode in which the grease is applied, may be further illustrated by reference to the dabber, which is an instrument by which tints of exceeding delicacy may be produced. It consists of very smooth leathers, being somewhat round on the side, and in the center of which is the point of iron, and of all others the dabber is the finest for lithography, prepared softer than the chalk, is evenly and thinly applied with a hard brush, and afterwards imparted to the stone by repeated blows with the instrument. The dabber was formerly much in use, particularly for delicate textures, but as lithography has been longer cultivated among us, our artists have acquired greater manual dexterity, and produce tints of the greatest delicacy with the hand alone, which have the recommendation of standing better than those produced with the dabber.

The printing from two or more stones, although not a new discovery (since it was practised in Germany long since by Sensefelder and others), has lately been more extensively practiced in this country than heretofore. In this style the drawing is first made in the usual way, with a chalk or powdered lead. The stone in this mode is then employed in three or four different ways, according to the number of stones in use. The sky and other delicate tints being omitted, and these are superadded from the 'tint-stone.' The tint is executed with facility by the printer on another stone (polished), with a modified preparation of chemical ink, and thus much labour is saved to the artist.

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

This mode has been applied in other ways than the one already explained: indeed it would be difficult to fix limits to its capabilities, improbable as they may be in the hands of able chemists. Among the transfer modes, that of printing copper-plate engravings from stone is worthy of notice; and a very clear explanation of this mode of lithography being eminently calculated to facilitate the despatch of business, its great utility has been sensibly felt in the commercial departments of the country, and in several ways, as by its means one written despatch can be multiplied at pleasure, without delay on the risk of typographical errors.

Aloys Senefelder, says Mons. Raucourt, 'an actor of one of the theatres at Munich, was the first to observe that calcareous stones had the property of receiving greasy lines and to print them from them. He remarked that, by wetting the stone, it was possible to charge it again with ink, and obtain a series of impressions: he thus became the inventor of lithography. Although it was long a practice to decry this art, it is proved that its merits and advantages are now sufficiently felt to make it unnecessary for us to say much in its behalf. If, as a general principle, an original drawing is better than a copy, then is lithography entitled to the respect of all who desire the general improvement of the public taste; which must surely be consequent upon a process by which original drawings are multiplied almost without limits; for all lithographic impressions are original drawings, if they be not altered or spoiled in the progress of the printing. The excellence of lithography depends of course, not only on the beauty and rapidity with which it is performed; and the facility with which drawings are executed upon stone, and impressions of some sort obtained from them, has led to a glut of worthless productions, and a consequent feeling of disgust towards the art in the public mind. It must be considered that the result, even when the work is conducted by the best hands; for a variation in the quality of the stone, or any of the materials employed, or even in the temperature of the weather, produces considerable changes in the lines printed. He remarked that, by this process, a fine specimen which has been produced are sufficient evidence that, even as a branch of the fine arts, it is every way worthy of esteem; while the commercial advantages of its lower departments, to which we have never given sufficient attention. Our object has not been to enter into minute details, but to explain the principles upon which lithography is founded, and to show broadly their application to the dif-
LITHOTRIPTICS (λίθος, a stone, and πτρίζω, to rub or bruise), medicines or other means which are thought to possess the power of dissolving stone or calculi in the urinary organs. The calculous concretions which are apt to form in the bladder are due to different kinds of stones originating in different constitutions or in different habits of life or locality of abode. They are also different, not only according to the time of life when their formation began, but they often become varied in the progress of their incrustation, and are different in the strata of which they are composed.

It requires therefore not only very close investigation into the characters of the urines of a person supposed to be affected by them, but a knowledge of their peculiar habits and quiescence with the chemistry and physiology of that fluid, and the great influence of the nature of the food and drink on its composition, to be able to direct the use of medicines which are regarded as lithotriptic. With few exceptions, their natures of the blood, as well as of urine, and particles of the case as has frequently resulted as benefit from their employment. The researches of recent chemists and pathologists have given something approaching to a scientific explanation of the circumstances under which calculi form within the body; their varied causes, so that choice of good may reasonably be expected from the use of lithotriptics than has hitherto been realised. [CALCULUS.]

Of the twelve or thirteen varieties of calculous concretions which have been discovered in the bladder or kidneys of man and animals, some are to be found in the human body, while the more common ones may be classed under two distinct heads—those which form under the prevalence of the urine or lithic acid state of constitution, and those which form under the influence of the fatty or albuminoid state of constitution. These sometimes alternate, and indeed the concretions which belong to the last class have almost invariably a nucleus or centre of the first kind, which shows how very important it is to avoid the causes of the lithic acid formation.

Independent of constitutional peculiarities, the leading causes of the formation of calculous concretions are errors in diet or regimen. The kidney is the great channel for the expulsion from the system of the ascerated or nitrogenous products, and stones are caused by the stooped energies of the body, and a mixture of the urine which do not interfere with the healthy action of the skin, equally conducive to the formation of stone, and thus the poor suffer from it as well as the wealthy. The causes being so widely different, the mode of treatment must also be different. A specific cannot therefore exist, and every case of stone must have its own peculiar excitement and treatment, but to the formation of calculi. Now an excess of animal food, particularly if exercise be neglected, and strong wines—in a word, rich living, with indolent habits—are the frequent origin of calculous complaints. Crude vegetables, with bad climate, are the yellow stone danger points, and those who have the healthy action of the skin, equally conducive to the formation of stone, and thus the poor suffer from it as well as the wealthy.

The natural history of Lithodorus, Pholis, etc., is so well treated in the species noticed in this article. The erosion is not confined to the Conchifera only; for Patella has the power of perforating certain rocks to a limited extent; nor to the Mollusca generally; for certain species of Echinid (Radiata, for instance, are known to make shallow basin-like lodgments in the rocks whereon they dwell. We shall here only refer to one of the last discussions on this subject which took place at a meeting of the Plymouth Medical Society on the 3rd of November, 1837. At this meeting Mr. Gray called the attention of the Fellows to some peculiar formations of chalk which he had recently found in the cliffs at Brighton, exhibiting performances made by the Patella and Pholidae, to the peculiar appearances which he considered had been produced by the case of the conchiferous species; remarking upon the supposition of his being exclusively caused by the rotation of the bones, but that it was chiefly due to the mechanical influence of the currents of water produced by the vibratile cilia of the animal, as noticed by Mr. Garner in his compendium (op. cit.). On observations of this part of the chitose conchiferous, made to the Society in 1833, 1837. (Zool. Proc., 1833, 1837.) This very interesting paper, beautifully illustrated, is published in its perfect state in the Transactions of the Society, vol. ii., and the observations on the practical as well as the Zoological reader, for the subject is of high importance practically; as those who are interested in such great public works as the Plymouth Breakwater well know. If this paper should meet the eye of a master of the art of engineering, he could make use of the information. The practical as well as the Zoological reader, for the subject is of high importance practically; as those who are interested in such great public works as the Plymouth Breakwater well know. If this paper should meet the eye of a master of the art of engineering, he could make use of the information.

Besides the species alluded to, and others noticed in the article, a great number, as Limnoria, Elphidium, Advena, etc., are common in the harbor. The sea-urchin, as well as many others, are capable of being cultivated in the proper place, certain crustaceans (Limnoria), possess the power of perforating wood at least. Excavation is also apparently carried on by the following marine animals. Certain Annelides, says Mr. Garner, in the concluding paragraph of his observations on this part of the subject, apparently possess this power of excavation. The rocks on our coast are pierced by a minute worm, probably of the genus Diplis of Montagu; it is strongly ciliated, but its mouth does not appear adapted for making its way through the rocks, and any experiment which would show when this animal will act would be a most beneficial generally, and to this country, where so many submarine works are carried on, both in wood and stone, especially.

Venerupis. This form is placed by Mr. Gray in that section of the Dimyrea, which is situated by having the branchies united medially; and the characteristic of Venerupis, as given by the same author, is to have the tube large, and the foot short and prominent behind.

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

Shell solid, striated, or radiated, a little elongated, gaping
posteriorly, more or less irregular, equilateral, very inqui-
vante, the anterior side being always shorter than the pos-
terior side, which is generally more strikingly cut by obli-
quent, flat, or otherwise small, but equally well defined, umbones marked, nearly con-
guous; hinge composed of slender, approximated, and
nearly parallel teeth, two in the right valve, and three in the
left, or three in each; posterior ligament a little elong-
gated, and in part external; muscular impressions oval,
the posterior one the most rounded, both united by a pallial
impression deeply excavated posteriorly.

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

M. de Blainville, who knew not the animal when he pub-
lished his "Malacologie," divides the genus into three sec-
tions and first excluded it from Pterioidea, in which it
would not be situated, by V. Rupellaria (genus Rupellaria, Fr. de Bell., third;
by J. Lamellota* (genus Petriola, Lam.); and he remarks that if the system of "engrance" of the species of exca-
vätes and other observation established are ap-
pelled to establish as many genera as there are species.
He adds that he has chosen Venerupis from among the deno-
nimations proposed for some of these genera, because it well
indicates that the species composing it are Veneres of the
rock.

Mr. G. B. Sowerby (Genera, No. xxvii.) notices the dif-
culty of ascertaining any distinguishing character between
the Lamarckian Venerupis and the Veneres Pullastria,
decussata, and others, except in the apparent habits of the
animal, a difficulty which had prevented him from endeav-
orously previously to clear up a point to which his attention
had been frequently directed, but which he thinks he has at
last overcome. It is well known," continues Mr. Sow-
ery, "that Venera perforata, Mont., Venera perforata, gyroco,
and several other species, are found in chalk and limestone
rocks, and that the Veneras Pullastria, decussata, and several other species that resemble them in general form and appearance, are found buried in the
sand; an apparently well marked difference between the two
exists in the present habits of their respective animals; we think
however that we have evidence to prove that there exists in
reality very little difference, and that the cavities in which
Lamarck's Venerupes live are rather the natural conse-
quence of the action of the sea-water in conjunction with
some of the excretions of the animal upon the chalk or
limestone, than of any power of the animals themselves to
pierce independently of such action; so that the difference
is really only in the nature of the shore on which the very
young shells are accidentally deposited, those which are
thrown upon a sandy bottom burying themselves in the
sand, and such as are deposited upon limestone or chalk
producing a cavity in which they live."

Mr. Sowerby then proposes to unite together under one appellation Lamarck's Venerupes with some of the shells
referred to by Blainville, and he thereby forms:—
M. de Férussac places the Saxicavae in the neighborhood of the Gastrocheneae and the Solenæ, and he places the Fe-
nerupes near the Veneres. M. de Blainville has adopted a
nearly similar opinion: we do not admit it any more than
that of M. de Férussac, and we shall preserve the family of the Lithophages as Lamarck established it in this work.
We rest our opinion, however, on a knowledge of the animals
belonging to the three genera Saxicavae, Petriola, and Vene-
rippae; they are bound by a common relationship (par des
rapports communes); thus the mantle, which scarcely opens for the passage of the rudimentary foot in certain Saxicavae,
opens in a more or less equal degree in the Petriola, and more still in the Venerupes. The foot follows a nearly analogous
development, always remaining however proportionally smaller than in other mollusks in which this organ is necessary for
locomotion."

Lamarck says of the Venerupes, or Venus of the rock,
that they seem in fact to have a hinge analogous to that of the
Veneres, but that nevertheless a slight difference in the disposition of their cardinal teeth suffices to enable us to

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* For a note by M. Deshayes (last edit. of Lamarck) to V. Irus, pointing out
a difference in the genera Venerupes to the species that excavate shells.

Lamarck makes his Lithophages consist of the genera

Saxicavae, Venerupes, and Petriola; and quotes the opini-
on of M. Fleuriau de Bellevue that boring shells gene-
 rally do not pierce stones by the attrition of the shell against
the stone, but by means of a softening or dissolving liquot
with the animal shells a little at a time.

Lamarck observes that it is not his intention to assemble
under this family of Lithophages all the boring bivalves,
or all that pierce stones; for, as he truly says, such an assem-
blage would be rather extravagant. He refers to shells
which are never perforated, and that in excavating with the
shells, the umbones of the shells which are separated, some from the Veneres, others from the Modiolae,
others from the Lutrariis, others again from the Carditias,
and remarks that it is not of those that he is treating.

Lithophages are not always enlarged, but are perforated
by the Ligatures, that gape more or less anteriorly, and
have the posterior side short, rounded, or obtuse, with the
ligament of the valves always external, which live habitu-
ally in stones, and for the reception of which he then knew
no particular family, or any family to which they might be
conveniently be approximated. He observes that he never-
theless places among them some species the habits of which
were not known to him. To this M. Deshayes adds in the
last edition (1855) a note stating that upon the same ground
he would remove some mollusks to the family of the
Modiolae, or the Carditiae, which pierce stones, it
would not be right to reject from the family of the Litho-
phages shells which do not perforate, but wherein we never-
theless find all the essential characters of the species which
is the case of the Bysomese and the Hiatulæ, the Saxicavae,
and to leave in this genus species which do not perforate.

M. Deshayes (loc. cit.), who does not appear to have seen
Ferruscaz and Hiatulæ, admits that he would remove the
mollusks that are not perforated by the Bysomese into the
Saxicavae, and to leave in this genus species which do not perforate. M. Deshayes (loc. cit.), who does not appear to have
seen Ferruscaz and Hiatulæ, admits that he would remove the
mollusks that are not perforated by the Bysomese into the
Saxicavae, and to leave in this genus species which do not perforate.

Some authors, remarks, have supposed that the
attrition of the valves against the stone sufficed to
wear away by degrees the shell, and that this would be
an adequate and sufficient cause. Nevertheless, says
M. Deshayes, the observations of the mollusks have
occurred to support it, whilst, on the contrary, a great number of proofs have been collected showing that perforating mollusks are not merely
except in calcareous stones. This mode of life renders very pro-
able the opinion of M. Fleuriau de Bellevue, that the animal
was provided with an acid secretion, by means of which it dissolved, in proportion to its growth,
the walls of the cavity it inhabits. An observation of my own is that the mortifications of the exterior of some of these animals are contained in close fitting cavities by no means made to
permit of rotary motion; that they are oval when the shell is
of that form; and that we always see rising between the
umbones of the valves a calcareous crust which forbids
any movement of rotation. M. Deshayes then proceeds thus:

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Some zoologists have believed that there was but
little necessity for preserving the family of the Lithophages,
M. de Férussac places the Saxicavae in the neighborhood of the
Gastrocheneae and the Solenæ, and he places the Fe-
nerupes near the Veneres. M. de Blainville has adopted a
nearly similar opinion: we do not admit it any more than
that of M. de Férussac, and we shall preserve the family of the Lithophages as Lamarck established it in this work.
We rest our opinion, however, on a knowledge of the animals
belonging to the three genera Saxicavae, Petriola, and Vene-
rippae; they are bound by a common relationship (par des
rapports communes); thus the mantle, which scarcely opens for the passage of the rudimentary foot in certain Saxicavae,
opens in a more or less equal degree in the Petriola, and more still in the Venerupes. The foot follows a nearly analogous
development, always remaining however proportionally smaller than in other mollusks in which this organ is necessary for
locomotion."

Lamarck says of the Venerupes, or Venus of the rock,
that they seem in fact to have a hinge analogous to that of the
Veneres, but that nevertheless a slight difference in the disposition of their cardinal teeth suffices to enable us to
recognise the genus. They are, he adds, lithophagous or perforating shells which are very inequilateral, and which are not distinguished from Petricola, except in having three cardinal teeth, at least, in one valve.

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

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

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

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

Example, Venerupes perforatus. Description.—Shell subrhomboidal, concentrically striated, running into strong wrinkles or ridges at the anterior side; sometimes, though very rarely, with very fine longitudinal striae; colour light-brown; umbo very near to one end, small, and turned a little sideways; the longer side much truncated; hinge with teeth of each valve, one of which is small, the others long, slender, and curving outward; middle tooth a little biform. Inside smooth, white, with generally some purple at the truncated end; margin plain; valves moderately concave. Length rarely exceeding 3-8ths of an inch, breadth more than 5-8ths.

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

Locality.—Costs of England. Lamark records a variety smaller and narrower, with subtastered lamellos, from the coasts of France, on the authority of M. Fleureau de Bellevue.

**Fossil Venerupes.**

M. Deshayes, in his tables (Lyell), makes the number of living species eight and of the fossil species (tertiary) six. He also quotes Venerupes Iris as being found both living and fossil (tertiary). He does not however note J. Iris as fossil in the last edition of Lamark (1830), and only gives those fossil species, *V. globosa* and *V. striata.* M. de Blainville gives the number of fossil Venerupes as five.

**Petricola** (Lam.; including *Rupellarla, Fl. de Bell.**

Generic Character.—Animal oval, thick, especially at the upper part; mantle with simple borders which are a little dilated in front, where they form a rather small opening for the passage of a tongue-shaped and feeble foot; tubes small, in the shape of cones, truncated at their summits, separated from each other by small furrows, long, and finely radiated at their orifices; branchial small.

Shell rather delicate, without an epidermis, white, radiated, oval, subtriangular, gaping anteriorly, more or less irregular, equivale, inequilateral, the anterior side much shorter than the posterior; teeth and cardinal in this case rather large, contiguous; hinge composed of small cardinal teeth not diverging much, one of which at least is bifold, to the number of two in one valve, and one, or two, in the other; ligament external, posterior, short, and convex; muscular impressions oval, united by pallial impressions which is often not very distinct, and has a very deep and rounded excavation posteriorly. (Rang.)

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

M. Deshayes, in a note to the last edition of Lamark, also of opinion that the latter did well in uniting Petirce and Rupellarla, which exhibit in fact so little difference, that the same species may be understood by either genus or the other genus, according to the state of development or preservation of the hinge. M. Deshayes goes further, and says that perhaps we shall be obliged hereafter to unite Petricola and Venerupes, which in reality differ but little from each other. This resemblance, he adds, exists not only in the shells but also in the inhabiting animals. Mr. Garner appears to be of the same opinion, for in his 'Achariota Classifications of the Lamelhbranchiata,' we find the Petricola, to this it stands at present, is composed of a large genus, which generally gives a very large extent, but no mention of Petricola.

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

Habits, &c.—Much the same with those of Venerupes, in the same rock with which, and in its close neighbourhood, Petricola is often found. Mr. G. B. Sowerby speaks of the cavities in which they live as being evidently those of working, though on account of their form they cannot possibly have been produced by a rotary motion, for they are exactly of the shape of the shell itself, and a very little larger. Petricola has been found at depths ranging from the surface or near it to a depth of seven fathoms. In the 'Proceedings of the Zoological Society' for 1834, there were probably not published when the 6th volume of the new edition of Lamark went to press. M. Deshayes however (between several species, *P. elegans* and *coralliphaga*).

The difference of form is so great, that we have thought it advisable to give, with permission, representations of the following species from the 'Genera,' by Mr. G. B. Sowerby, instead of the description and figure of one species.
The species here figured as recent is also noted by Lamarck as fossil in Italy, under the name of Cypricardia coralliophaga.

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

Clotho. (Fossil only.)

**Generic Character.**—Animal unknown.

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

Example, Clotho Faujasii.

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

Ungulina.

**Generic Character.**—Animal unknown.

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

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

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

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

Habits.—M. Deshayes states that observations recently
made by M. Ram have shown that the Ungulinae are per-
forating shells, which, he says, he had already known from
a fossil species in the environs of Bordeaux.

Example, Ungulina transversa.

Ungulina transversa.

Fossil Ungulina.

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

Saxicava.

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

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

Both M. de Blainville and M. Rang place the genus
among the Pyloridea. The former is of opinion that it
does but little from Glycera.

Mr. G. B. Sowerby (Genera, No. xxv.) includes in the
genus Saxicava shells which, he observes, have had, in
conformity with the various views of authors, at least six
different generic names. He apologizes for the conclusion
to which he has come in contradiction to so many great
authors, but gives the following reasons for his opinion.
He premises that it will not be disputed that Solen minutus
of Chemnitz and Montagu, Hiatella arctica of Daudin,
Cardita arctica of Bruguiera, and the Byssomya of Cuvier,
are one and the same species; and that Leach's Pholadina
includes as distinct species of the same genus the Solen
minutus of Montagu and the Mytilus rugosus of Lamarck;
'now the former of these,' continues Mr. Sowerby, 'is Hiatella arctica of Lamarck and Turton, and the latter
Saxicava rugosa of the same authors; thus all the six
genera are reduced to one by Dr. Leach, whose authors a
indisputably very great in such matters; we do not how-
ever propose to our readers to take it as conclusive, but
will state that we possess, as Dr. Leach did, a series of spec-
imens, the young ones of which are more regular in size
and more strongly sinuous than the older, and are to all
intents and purposes Hiatella arctica, or Solen minutus,
and the older specimens, losing the strongly-marked double
rings of spines, though always ruhing indications of these,
and assuming a much less regular form, become character-
istic specimens of Saxicava rugosa: the hinge teeth of
the younger specimens may be advanced as an argument against
the identity of these shells: it is however well known that
in many shells, particularly those that are irregular, the
teeth become obsolete with age: thus if the hinge teeth,
the general form of the shells, or the double row of spines,
cannot be depended upon as generic distinctions, the La-
marckian genera Hiatella and Saxicava, and his Solen
minutus, merge into one; to show that the shells described
as distinct species under either of those generic names are
identical is not important to the present work; it is there-
sufficient to observe, that in all irregular shells that are
either found attached to or imbedded in rocks, coral,
roots of sea-weeds, &c., the general form cannot be taken
as a character; and we believe the Mytilus precissus and
several of the Saxicava described by Lamarck and Turton
to be merely variations of S. rugosa., than which there is
perhaps no shell more subject to variety of form.' To illus-
trate this exposition, Mr. G. B. Sowerby gives in his 'Genera'
the following figures of Saxicava rugosa in different stages
of its existence.
LIT

We must consider the character of the byssus in the Byssus as of little value; for the greater number of zoologists have united this genus to the Saccariae. M. Deshayes then goes on to observe that Lamarck has comprised the same species under two very different genera, and that his Solen minutus and Hiatula arctica are the same shell; he is satisfied of this, and only to compare the synonyms. "The fact is," he adds, "that the shell in question is not a Solen, and ought not to constitute a particular genus; for it belongs to the byssiferous Saccariae, as we have satisfied ourselves that it does by an examination of the species." 1

M. Deshayes further observes, in a note on Saccariae Australis, that all shells which, like those of this genus and the two following (Patricola and Venorupis) are crammed in their different forms, so to speak, impose upon the most acute observers, especially when the observation is confined to a small number of individuals. This happened, he adds, to Lamarck, who has given to the same shell the names of Cribula Australis, Saccariae Australis, and Saccariae gymnospora; and which has prevailed on this subject. Lamarck receded from this catalogue it would be necessary to unite these three species under one name, and arrange them among the Saccariae.

Geographical Distribution.—Very extensive. The Northern Ocean, the Brachian seas, the Mediterranean, the South Ocean, and the warmer coast of America, are recorded as localities.

Habits, &c.—Mr. G. B. Sowerby remarks that the Saccariae are frequently found upon the outside of oysters, protected by their irregularities, and in cliffs of rocks or cliffs, according to their species, of limestone, and hard clay. Those, he adds, which themselves perforate the hollows in which they live are more regular than others.

Of the states of these species it is certain, hence M. de Bellevue and Mr. Osler, in this instance, believe them to be formed by the phosphoric acid secreted by the animal, and they suppose this animal to habit those rocks only which are composed of carbonates of lime or chalk. These last are much frequented by the Denudation of the stone, the shells of the different species, and the rocks which they occupy.

Mr. G. B. Sowerby observes that the species of this genus are not numerous, and that they are not easy to distinguish from each other, as the reader may imagine from the confusion which has prevailed on this subject. Lamarck recorded five species. Of the first two of these (Saccaria rugosa and S. Gallicana), one, according to M. Deshayes, must be supposed, being in reality only a variety of the other. Saccaria Australis and S. veneformis, Lamarck's fourth and fifth species, are also united by him. All the others of these M. Deshayes adds S. Guerinii, from the Mediterranean, and S. rhomboides P as recent species. Mr. G. B. Sowerby (Zool. Proc., 1834) has added three recent species collected and brought home by Mr. Cuming.

Lamark, as we have above noticed, characterized no fossil Saccariae. M. Deshayes, in his tables, gives the number of recent species as 5; and 11 as the number of fossil species (tertiary). He notes two species, S. minutus and S. Pholus, as both living and fossil species. We do not find S. minutus recorded at all in the last edition of Lamark (1835), nor is the fossil designation added to S. Pholus. Of fossil species only five are recorded, unless we regard Saccaria rhomboides (Deshayes) are vol only, which is the synonym (Donazx rhomboides, Poli, Solen minutus, Linn., and Hiatula arctica, Lam.) seem to forbid. There is no recent "habitat" given; but there can be little doubt that it is identical with the living and fossil S. minutus of the above classification.

The reader will bear in mind that the ravages of the stone-exercising genera noticed above, though considerable when they congregate in numbers, are superficial in comparison with the operations of Pholas and Lithodoma. The latter is a portion of the family which has been admitted by Fleming, to some fossil "madrepores," as the lamelliferous corals are commonly termed, which appear confined to the older strata (especially mountain limestone). They are described in Cratxiphylum of Goldfuss by Professor Phillips. (Geol. Mag., vol. ii., p. 549).

LITHOSTROTON. [CIRIPEDA, vol. vii., p. 297.]—Lithostrotion, as it becomes a stone, and, in the course of time, a calcareous stone, is a most curious and difficult subject. Although urinary calculi may be extracted from the kidneys, urethra, or bladder, the term lithotomy is restricted to the operation of cutting up this latter viscera for the purpose of removing one or more stones. From the complex nature of the fluid secreted by the kidneys, and the quantity of saline matters which it holds in solution, deposits not unfrequently take place in one or other of the cavities to which the urine has access, as solid concretions, or urinary calculi, may be met with in the kidneys, ureters, bladder, or urethra; but the majority of these concretions are believed to be formed originally in the kidneys. Now, if we suppose one of these calculi to have descended into the bladder, it is easy to imagine that it would there form a nucleus, around which the additional materials might be constantly added to its bulk. A priori reasoning would lead us to suppose such to be the result, and that this actually takes place is proved by the fact that many calculi have for their nucleus foreign bodies that have accidentally entered the bladder, as bullets, splinters of bone, bits of bougie, &c.

The number and size of calculi met with in the bladder differ as much as their form and composition, and their magnitude is generally in an inverse ratio to their nature. A calculus once formed appears to be either soft and friable, or very dense and hard; and they may be quite smooth or beset with numerous tubercles. These circumstances, together with their loose or fixed position in the bladder, have considerable influence in determining the comparative operations. Children and aged persons are more subject to the disease than those in the vigour of life, and males than females; the inhabitants of temperate climates, than those of higher or lower latitudes.

LITHOTOMY.—The term, originally derived from the Greek words λίθος, a stone, and τομή, a cutting, implies the act of cutting up a stone or large concretion within the body, a part of the body; the opening of the body to the view of the surgeon; the surgical operation necessary for the removal of stone or concretion which may be found in the abdominal, thoracic, or other part of the body.

We shall hereafter have occasion to speak of several kinds of this operation, and to consider the circumstances in which the surgeon would be most likely to undertake the operation.

Lithotomy.]...
The Apparatus Minor, Cutting on the Gripe, or Celsus’s Method—This is the most antient kind of lithotomy, and has probably been practised from time immemorial; but Celsus having first described it, it has been called Lithotomia Celsiana; and from the stone, previously fixed by the pressure of the fingers in the anus, being cut directly on the urethra, the operation was called the only instruments used. The appellation of the lesser apparatus was given to it by Marianus, in order to distinguish it from a method which he described, called the apparatus major, from the many instruments employed. The operation on the grique are, — ist. It is only applicable to children under fourteen years of age. 2nd. It is uncertain what parts are divided; this depending on the degree of force employed in making the stone project in the perineum. 3rd. The injury liable to be inflicted on parts whose integrity is essential to the success of the operation.

Apparatus Major, or Marian Method, was founded on erroneous principles, and in ignorance of the nature of the parts to be operated on. It was supposed that wounds of membranous parts would not heal, while their diatation might be undertaken with impunity. In conformity with these notions, the precept of Celsus, “Ut plaga paulo major quam calculus sit,” was neglected, and the stone was made to enter so little as possible with the knife, and as much as possible with instruments called dilators; but the parts thus subjected to dilatation are inelastic, and consequently are liable to be injured. The several operations I think have rendered this one of the most fatal operations in surgery; but notwithstanding this, it was practised for near 200 years, till Frere Jacques, in 1697, taught at Paris the method at present in use.

Operation.—So named from the incision into the bladder being made above the pubes, was first practised in Paris in 1475, by Colot, as an experiment on a criminal, by permission of Louis XI; but the earliest published account of this mode of operating was in 1556, by Pierre Franco. This operation consists in making an incision above the bladder, the stone is too large to be extracted from the perineum, or where there is disease of the urethra and prostate gland; but there are several objections to it, and it is now entirely abandoned.

Operation through the Rectum.—This method was first suggested in a work published in the sixteenth century; but the proposal never received much attention till the year 1816, when it was revived by M.anson, of Paris, and carried out by him, and others. It was tried, and unfavourable results which attended the performance of this operation prevented its being generally tried or adopted, and no one of the present day ever thinks of performing it.

Lateral Operation—so called from the prostate gland and bladder being cut across, it is, in reality, one of the operations of avoiding wounding the rectum, is that adopted at the present day. It was first practised by Pierre Franco, a surgeon at Tournières, but he never established the method as a permanent improvement in surgery; this left for Frere Jacques, a priest who, in 1697, came to Paris in order to make known this method, which he employed with great success at various places. Although it appears that he was not quite so successful as he had led the world to believe, the superiority of his mode of operation was immediately perceived and recognised, and, with slight modifications, was adopted by most of the surgeons of that period. Hitherto the Marian section had been used: the advantages of an operation by which a free opening was made into the bladder, over which it was so small as not to admit of the extirpation of the stone without laceration of the parts, are too obvious to require comment. Surgeons of the present day differ somewhat as to the extent of the opening to be made into the bladder, the choice of instruments to be employed; some make use of which cuts into the bladder from without inwards; while others prefer the bistoury cachet, or gorget, which divides the prostate gland and neck of the bladder from within outwards. However, we will proceed to a description of the method as usually undertaken with the cutting gorget.

The patient having been sound asleep, to ascertain that the stone is actually within the bladder (for instances have occurred of stone becoming encysted a short period before the operation), and the rectum being emptied by means of a clyster, he is placed on his back upon a table, with his buttocks project-
LITHOTRITY (from λίθος, a stone, and the root τρίτος, to pierce); Lithotripsi (from λίθος, and τρίτος, to break), 'the reduction of a calculus in the bladder into small pieces, by means of instruments passed into that organ through the urethra, so that the fragments may be discharged through the latter tube, and no necessity remain for the performance of lithotomy.' This operation, which must be ranked among the most brilliant achievements of modern surgery, was first seriously proposed by the Hon. Mr. Gruithuisen, and a Bavarian surgeon, constructed an apparatus for performing it. But the originality of the idea was probably derived from antient writers, several of whom speak of the practicability of breaking stones within the bladder, although they may not have thought of the means of effecting it. At the commencement of the nineteenth century, Rodriguez, a physician of Malaga, is said to have broken a stone in the bladder by striking it with a catheter; but the first suggestions towards the apparatus constructed expressly for this purpose is by Gruithuisen. It consists of a detachable straight tube, which was introduced through the urethra into the bladder. Through the tube was passed a noose of copper wire (by which the stone was caught hold of and fixed) and was thus broken. It is a drilling-motion was given to the latter instrument by means of a bow, and the stone was thus perforated or broken. Since this period, the operation has undergone successive improvements in the hands of Leroy, Cuvial, and of the French, and it has since been adopted by this last gentleman. The patient is placed on an operating bed, so constructed as to admit of any inclination being given to it that the operator may think proper. At its foot is an apparatus for affording a fulcrum to the instruments which is to be passed through the bladder; and two slippers, securely fixed at a short distance on each side of the apparatus alluded to, serve for securing the feet of the patient, who is placed in a position nearly resembling that in which the operation of lithotomy. The stone, which is now moderately well broken, is ejected through the catheter. A pair of strong sliding forces, the opposite surfaces of which are furnished with teeth, are then introduced; and the calculus having been seized, the lower piece of the former is inserted in the most skilful manner in the stone. The fulcrum, and the upper piece is struck with a hammer and the calculus broken. Thus, neither the shock arising from the concussion is communicated to the bladder, nor is this organ liable to be injured by the fragments being forcibly projected against its internal surface. The instruments are then withdrawn, and the fragments are afterwards voided with the urine; or if any remain too large to be thus discharged, the operation is repeated from time to time till all is got rid of. It was to be desired that an operation so practicable as this might be rendered possessing the dangers attendant on the operation of lithotomy, was more generally applicable than it is found to be, but it is subject to the following disadvantages. The patient does not always recover at once, and in many instances the operation is required to be repeated several times; and as the smallest fragment which remains behind will form the nucleus of a new stone, a recurrence of the disease is more likely to take place after this operation than after lithotomy. It is unfit for dark or narrow bladders, for old patients, or those of advanced years; and for those cases, where the stone is not cored, or where the passage of the calculus is obstructed by the projecting parts of the bladder. It also requires a sufficient supply of blood, and there are cases of this kind, where the health of the patient is precarious, which the lithotomy of the lithotripi or lithotomy in the broad sense is to be preferred to. In many instances the operation is attended with much pain and inconvenience, and in some cases is followed by permanent consequences. The patient is liable to suffer from the operation generally lasting from three to six months, and the more so as it is more difficult for the patient to sit or stand. It is most commonly attended with some inconvenience to the patient, and the operation is more likely to be attended with some hazard than the operation of lithotomy.
At Minsk the 5, and glorious now long

then, the grand-duke Gedimyn in 1315. He made his extensive conquests in the south-western principalities of Russia, and consolidated his power by in-
suring the most perfect protection to the religion, languages, customs, and laws of the innumerable Tribes that inhabited those lands. But the most extraordinary circumstance of that conquest is, that those newly acquired provinces were in-
trusted only to the administration of such princes of the

Lithuanian dynasty as had the lead, or the right to

conspire in the election of their sovereign, who always re-
stayed the soverign still remained an idolete. That policy, so contrary to the spirit of intolerance displayed by other conquerors, strongly attached the Russian Christians, who were five times as numerous as the usual Lithuanian population, to their new masters, under whose sway they found that repose and security of which they had been for a long time deprived by the in-

Lithuanian, but elective in Poland, after their accession to

crown of the latter country, gave up the government. Lithua-
nia to a prince of their family, but still retained the

sovereignty. The most celebrated of those princes was

Vitold (1430). A kind of union of the two countries was

established at the death of Lithuania in 1569, preceded of sessions and deputies of both nations. By this transaction the rights of the Polish nobles were extended to those of Lithuania, whose throne became elective like that of Poland. The diets of the two countries were held in common, but the laws, finance, and foreign policy were separated. This state of things continued till the fall of Poland.

We have already said that Lithuania extended under the

regime of Olgherd as far as the banks of the Don and the

shores of the Black Sea. It lost a great part of its de-

tions at the division of Lithuania in 1340, between the

grand-duke of Lithuania, and on several subsequent occasions. But these events belong to the history of Poland, of which Lithuania then formed an integral part. At the time of the first dismemberment of Poland in 1569, Lithua-
nia was divided into the following palatines or counties:

Viina, Troki, Novogorod, Brest, Vitelpak, Polock, Miatisk, and the duchy of Samogitia.

The territory which constituted the government duchy of

Lithuania was, at the time of Olgherd's accession, something like the Russian governments of 1, Viina; 2, Grodno; 3, Biel-

tock; 4, Minsk; 5, Mohilew; and 6, Vitelpak; and, 7, the
duchy of Samogitia, in the kingdom of Poland, constitu-
ded by the treaty of Vienna, 1615. The extent and popu-

lance of the country, as it originally

Vilna, Polock, Grodno, Mohilew, Vitelpak, &c. The

principal rivers which water Lithuania are the

Neman (in German, Memel), the Bieptep, Berezina, Viina, &c. The chief towns are Viina, its ancient capital, Grodno,

Minsk, Mohilew, Vitelpak, &c.

It has been mentioned that the Lithuanians remained

islanders till the end of the fourteenth century. Their chieftains or dukes, Petrvs, or their successors, possessed very few rights over their subjects, except what they might exercise in their own persons. Occasionally they have undertaken expeditions against the Tartars, or have been engaged in special local wars, as in 1237, 1240, 1241, the winter of 1242, and the summer of 1243. The latter event has been mentioned, because it was in consequence of the

consequences of which the Lithuanians were never

able to retain possession of their conquests. It appears,

then, that the Lithuanians, even in the beginning of the fourteenth century, were<span class="redactor-invisible-space" role="presentation" class="redactor-invisible-space" style="display: inline; margin: 0px; padding: 0px; width: auto; height: auto; border: 0px; outline: 0px; vertical-align: baseline; overflow: visible; box-sizing: content-box; border-collapse: separate; clear: both; float: none; position: relative; top: auto; left: auto; right: auto; bottom: auto; width: auto; height: auto; max-width: none; min-width: 0px; max-height: none; min-height: 0px; text-indent: 0px; text-align: start; text-transform: none; line-height: normal; letter-spacing: normal; word-spacing: normal; white-space: normal; list-style: none; text-decoration: none; display: inline !important; visibility: visible !important; overflow-wrap: normal; float: none; clear: none; box-sizing: content-box !important; min-width: 0px !important; min-height: 0px !important; max-width: none !important; max-height: none !important;" class="redactor-invisible-space__inline"></span>
The Polish-Lithuanian, or Samogitian language, which is spoken in the north-western part of Lithuania, and particularly in the province of Samogitia, differs from the Russian dialect in being more free from the admixture of German words, and it is certainly the purest of all the dialects, as the population by which it is spoken resisted the German invasion. The Russian language, which, as we have seen, became the official language of the country, from the fourteenth century, and the subsequent influence of the Polish, have introduced many words derived from both these languages, and a large proportion of the inhabitants of Courland, and a part of the government of Vitebsk, which was formerly called Polish Livonia. It differs from the other Lithuanian dialects in having an admixture of Finnish words, which is peculiar to this dialect. It is subdivided into the following:—

1st, the old Prussian, which had been spoken in Prussia previously to the arrival of the Teutonic Knights. It is very curious to remark that from the time it was tried by all means to extirpate it. Notwithstanding this unfavourable circumstance, it was still in general use at the time of the Reformations; but in spite of the support it received from the Protestant authorities, it dwindled away, in consequence of the cruel devastation, and the latter part of the seventeenth century, there were at that time only a few old people who understood it, and it is now entirely extinct as a living language. It differs from other Lithuanian dialects in having a greater admixture of German than Slavonian words, which was owing to the influence of various German dialects, which the German knights, who took possession of the country, and whose language finally superseded that of the native population.

2. The Prussio-Lithuanian dialect, which is now spoken by all the inhabitants of Prussia, and in its composition promiscuously all the local dialects into which this language is subdivided: the result of such an absurd plan was, that it became unintelligible to all. It was therefore remodelled, and being the most widely spread, was adopted. This cætism, as well as the Enchiridion, or church service (Königsberg, 1551), are the only extant monuments of that old language.

3. The Prussian-Lithuanian dialect, which is now spoken in eastern Prussia, and in the north-eastern part of Prussia, but it has received a great admixture of Polish words. A Bible, translated into that language by Quadrat, was published at Königsberg, 1755, and many religious works in that same dialect are mentioned in its preface.

*See LITMUS, vol. iii., p. 590.*

**LITMUS, or LACMUS,** a fine blue but fugitive colour prepared from the _Lecomora tartarea_, a lichen which grows in the Canary and Cape Verde Islands. In order to extract the colouring matter the lichen is cleaned and reduced to
powder: this is then mixed with urine and lime, and in a few days the blue colour is developed. The litmus is imported in small cubical cakes of dusky-blue colour, which are light and easily reducible to powder. The colouring matter, which is supposed to be ethyrhin, existing also in arbutis, is soluble both in water and spirit of wine, and is of a beautiful tint.

Litmus is used as a chemical test for detecting the presence of acids, by which it is turned red, and the blue is restored by alkalis. But when slightly reddened by acid, and then exposed to a current of air, it is rendered quite colourless either as a tincture, or more commonly paper stained blue with it. The tincture is sometimes, but improperly, called tincture of turmeric, a name which was given to the colour in this state, being the source of a popular drink, as a test of acids; it was nevertheless found by Mr. Watt that it detected the presence of sulphuric acid diluted with 100,000 times its weight of water.

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

LITRE, the French standard measure of capacity in the metrical system. It is a cubic decime, or a cube whose sides are each nine inches, and is equal to about 27 English cubic inches, for four litres and a half make, roughly speaking, an imperial gallon. The litre is therefore a little less than our quart: more precisely, it is 1.2009687 of a gallon.

Littlenote. THOMAS, was the eldest son of Thomas Westeote, of the county of Devon, Esq., by Elizabeth, the daughter and sole heiress of Thomas Littleton, Littelton, or Littleton, or Littleton (the last being the mode in which he himself appears to have written it: see the extract from his will below), of Breedon in Worcestershire, whose surname and arms he took. He was educated at one of the universities, and thence removed to the Inner Temple, where in due time he became one of the readers of that Society: Sir Edward Coke mentions his reading on the statute Habitation Condicionis, and he was appointed, by Henry VI. steward or judge of the court of the palace or marshalla of the king's household. On the 13th May, 1453, in the 33 Henry VI. he was made king's sergeant, and in that capacity rode the northern circuit as judge of assize. He was a general and public man, &c. and two years after was in commission, with Humphrey, duke of Buckingham, and William Birmingham, Esq., to raise forces in the county of Warwick. (Collins, Peerage, who gives as his reference, * Pat. 36, Hen. 6, p. 1, m. 7.) In 1462 (2 Edward IV.) he received a general pardon from the crown, and was continued in his post as king's sergeant, and also as justice of assize for the same circuit. On the 26th April, 1466 (6 Edward IV.), Littelton was appointed one of the judges of the Court of Common Pleas, and rode the Northamptonshire circuit. About the same time he obtained a writ, directed to the commissioners of the customs for the ports of London, Bristol, and Kingston-upon-Hull, for the annual payment of 110 marks, to support his will, yearly, in the county of Dorset. He was knighted and created baron of Mounalow, in the reign of Charles L, and Sir Thomas Littleton, Bart, Speaker of the House of Commons, in the reign of William III. His two daughters, named Ellen and Alice, both died unmarried. (Collins's Peerage, viii. p. 44.)

Littleton died at Frankley on the 23rd August, 1441, aged about sixty, and was buried in Worcester cathedral, where his tomb bore the following inscription:—'Hic jacet corpus Thome Littelton de Frankley, Militus de Baloce, et vicarius in Vesta, de loco suo, qui obiit 23 Aug., Anno Dom. MCCCLXX.'

In Collins's Peerage there is a copy of Sir Thomas Littelton's will, 'faithfully copied from the original remaining in the Prerogative Office.' It contains some curious particular points, and would make a good room for the following extract from its commencement:

'In the name of God, Amen. I, Thomas Littelton, Knight, son of King's justice of the common place, make my testament, and notify my will, in the manner and form that followeth. First, I bequeath my soul to God, and my body to Saint Christopher, the which our said lord did truste to be borne on his shoulders, and to all the saints of heaven; and my body to be buried in the tombe I let make for me upon my south side there to be builded forming the church of the monasterie of our said blessed lady, Worcestershire, under an image of St. Christopher, in case I die in Worcestershire. Also, I wulle, and specially desire, that immediately after my decease, my executors finde three purses of silver, containing three pounds of gold, to be paid over to the bishop of this diocese for my soul's requital, to be disposed of as they shall see fit. The will is dated at Frankley, 22nd August, 1481, being, as appears from the date of his death on his monument already quoted, the day preceding that of his death.'

Sir Edward Coke has given it as his opinion that Littelton, 'the most eminent lawyer of his age,' when he was judge, after the reign of King Edward IV., but that it was not printed during his life; that the first impression was at Rouen in France, by William de Tallier, ad instantiam Richards Prou, the printer of Henry VIII., and that it was first printed by the crown in English in the reign of Henry VIII. In a note to the eleventh edition of Sir Edward Coke's 'Commentary,' it is remarked that this opinion is erroneous, because it appeared by two copies in the bookseller's catalogue that the 'Tenures' were printed in London in the year 1528, one by Robert Redmane, again by Robert Redmane, and that was the nineteenth year of the reign of Henry VIII. It is observed that, to determine with certainty when the Rohan or Rouen edition was published, is almost impossible; but that from the old edition of above mentioned it may be collected, not only that the Rohan impression is older than the year 1528, but also what occurs in the beginning and end of them, that there had been other impressions of the book in question. However, in the end of time, settle with accuracy when the first edition of Littelton's work was printed.

Littleton's work on English tenures is written in Norman French, divided into three books, and addressed to his son, a younger son of Sir Philip Chetwode, of Tagestre, in the county of Stafford, one of the Earls of Shrewsbury. John BroomsFord, in the county of Salop, Esq., with whom he had large possessions. By her he had three sons and two daughters. 1. William, ancestor of the Lords Littelton, baron of Mounalow, in the county of Worcestershire. 2. Richard, to whom the 'Tenures' are addressed, an eminent lawyer in the reigns of Henry VII. and Henry VIII. 3. Thomas, from whom were descended the Lord-Keeper Littelton.

* Collins's 'Peerage,' vol. vii., p. 423, who cites as his authority for this, * Autographus perexa Hoculomis Laem Dom. Geo Littelton, Baronem de Frankley.
LIT
in the law. Notwithstanding, albeit that certain things which are more and more specified in the book are not otherwise law, yet such things shall make the more plain and able to understand and apprehend the arguments and the reasons of the law, &c. For by the arguments and reasons in the law a man more soon shall come to the certainty of the law.

'Ler plus laudatur quando ratione probator.

The circumstance above referred to of this treatise having been originally but a sort of introductory lesson for the better understanding of certain chapters of the "Antient Book of Terrors," may in part account for what has been often remarked respecting its defect in the accurate division and logical arrangement of the subject matter. The style however in which it is written is remarkably good. It combines the qualities of clearness, plainness, and brevity, in a degree that is not only extraordinary for the age in which its author wrote, but renders him superior, as to purity of style, to any writer on English law who has succeeded him. It is equally free from the barbarous pedantry and quaintness of Coke, and from the occasionally somewhat rhetorical pretensions of Littleton.

Littleton very seldom quotes any authority for what he advances; indeed, it was not the practice of the lawyers of his age to cite many authorities, even in arguments and opinions delivered in court. Littleton is a fair, or rather a slight, instance of this. Professional lawyers, often with great acuteness and consistency, followed out all the consequences that might be logically deduced from certain principles or maxims, some of which maxims or premises being irrational and absurd, necessarily led to conclusions of the same kind. Alterations in and additions to the law since Littleton wrote, there is much of Littleton's book that is not now law; but from the absolute necessity of a knowledge of what was the state of the law with respect to property in land, in order to understand thoroughly what it now is, Littleton is still an indispensable book to the student of English law. But we are inclined to be of the following opinion given in Roger North's "Life of the Lord-Keeper Guildford:--

'Consider how much plausible and perspicuous arguments our students, to whom it is at least unprofitable, for it is but a common-place (book), and much more obscure than the bare text without it. And, to say truth, that text needs it not; for it is so plain of itself, that a comment, properly so called, doth but obscure it.' (vol. i, p. 21.) Coke's 'Commentary on Littleton' was no other than a sort of common-place book kept by Coke as a manual, in which he jotted down all his law and references to law as they occurred.

To put this Commentary, or rather common-place book, into a student's hands to read as an institutional or elementary book is evidently futile; and the doing so is probably the cause why so many students of English law break down at the very threshold of their career. The effect is, as it were, equal to that of the second course in a grammar school; "like reading over a dictionary, which never teacheth a language:

' and therefore with him we may conclude that "certainly it is an error for a student to peruse such." (North's Life of Lord-Keeper Guildford, vol. i, p. 21.) It is much better for the student who lays well the foundations of his professional knowledge to read Littleton without the comment (which of course he will find useful afterwards, when he wishes to examine any particular point very minutely); but then he must read slowly and carefully, and in a short, very much as he would read Euclid, if he wishes to master it.

(Literary and historical notices and extracts from the works of the English lawyers and antiquaries connected with the history of the law in England, and the early history of the English church, are given in the"Reynolds' Literary and Historical Review," vol. v., article "Lord Littleton.""

LITORI'NA, [TURBITIDAE.]

Littorina is a group of small cephalopods, confined to the seas of the Silurian and older systems. The shell is partly straight and partly conical, nearly as in spirula, Lam. LITURGY (from the Greek λητοργία, which originally signified at Athens certain public functions or duties to which the magistrates, kings, and archons, belonged, and more particularly the office of Common Prayer used in our own or any other church. In the Greek P. C. No 588. or Constantinopolitan church three Liturgies are in use, those of Basil, Chrysostom, and the Liturgy of the Prase- denchon. In the Roman church the mass is divided into several books or offices, as the breviary, the ceremoniale, or office peculiar to the pope; the missal, or office of the mass; the pontificale, directing the functions of the bishops, and the ritual, or pastoral, for the guidance of the simple priests. The Spanish is better known by the name of the Mozarabic Liturgy. The Ambrosian Liturgy is that more particularly in use in the church of Milan. In France the church of St. Martin at Tours had a breviary of its own, which was not used in the Roman church nor that of Tours; and the same difference obtained at St. Quentin and in other Gallican churches.

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

Previous to the Reformation of the Church of England the service was performed in Latin, and different Liturgies were used with us, also, in different parts of the kingdom. The cathedrals of York, Lincoln, Hereford, and Bangor, the monasteries of Durham, Ely, and Canterbury, used them; but no cathedral had such a variety of service books for its use as Sarum. 'Use' was another name for the Ordinale, or complete service of the church of Salisbury, instituted by bishop Osmund in 1077. It was therefore the service of the church of Salisbury, modified and adapted to the several churches and monasteries within it, which had obtained almost all over England, Wales, and Ireland. The whole province of Canterbury adopted it, and in right of it the bishop of Salisbury was precentor in the college of bishops whenever the archbishop of Canterbury performed service. The publication of King Henry the Eighth's 'Primer' in 1535, in the vernacular tongue, was one of the first steps in the reformation of doctrine and worship in the Church of England. It was followed in 1537 by the "Goody and Pious Institution of a Christian Man," containing a declaration of the Lord's Prayer, the Ave Maria, the Creed, the Ten Commandments, the Seven Sacraments, &c., republished with corrections and alterations in 1540 and 1543. In 1545 a new Primer, or "Book of Common Prayer," was prepared by archbishop Cranmer, bishop Ridley, with eleven other bishops and eminent divines, were commissioned by the king in council to compile a Liturgy in the English language free from the erroneous doctrines by which the Latin Liturgies of the church, which had united, and with them the nation, distinguished. This was confirmed by parliament in 1548, and published in 1549. In 1551 it was slightly revised, and again confirmed in parliament; but both this and the former act of 1548 were repealed on the 1st of May, as not applicable to the provinces of the church, and that, while she was about to restore. Upon the accession of Elizabeth the act of repeal was reversed; several learned divines, headed by archbishop Parker, were appointed to make another review of King Edward's Liturgies, when the restoration of the former act was definitely and finally determined upon, and finally confirmed by parliament. The act received the royal assent April 29th, 1559. In the 1st of James I., after the conference at Hampton Court between that prince with archbishop Whitgift and other bishops and divines on one side, and Dr. John Whitgift, with some other puritans, on the other, a few slight alterations were introduced, the chief of which consisted in adding some forms of Thanksgiving at the end of the Litany, and in the addition of a special psalm for the day; and in the rubric in the beginning of the office for private baptism the words "lawful minister" were inserted to prevent midwives or laymen from presuming to baptize. In this state it continued till the time of Charles II., who, in dividing the world in a certain religious manner, treated as many Presbyterian divines to consider of the objections raised against the Liturgy, and to make such reasonable and necessary alterations as they should jointly agree upon; nine assistants on each side being added to supply the place of any of the twelve principals who should then be absent. On the episcopal side were Dr. Fuen, archbishop of York, Dr. Sheldon, bishop of London, Dr. Cosin, bishop of Durham, Dr. Warner, bishop of Chichester, Dr. Henchman, bishop of Salisbury, Dr. Morley, bishop of Worcester, Dr. Burnet, bishop of Winchester, Dr. Arundel, bishop of London, Dr. Walton, bishop of Chester, Dr. Stern, bishop of Carlisle, and Dr. Gauden, bishop of Exeter. On the
L I T U S, a name given to a spiral thus described:—

Let a variable circular sector always have its centre at a fixed point, and one of its terminal radii in a given direction. Let the area of the sector always remain the same; then the extremity of the other terminal radius describes the Litus, or the curve of the common prayer book.

LITUS, a crooked staff resembling a crozier, used by the augurs among the ancient Romans in making their observations on the heavens, hence called the Auraliguritus. Dr. E. D. Clarke asserts that there was an older litus, called the Regul or Quadrillitius, which the ancient kings of Italy held as a sceptre in their hands long before the time of Romulus or the institution of the Augurate, particularly mentioned by Donatus and Servius in their Commentaries upon Virgil. The etymology of the name is uncertain.

(Pitisci Lexicon, in voce; Clarke's Observations on the Litus of the Antient Romans, in the Archaeolog, vol. xix, p. 396-404.)

LITUANUS, or LUITPRANDUS, was a deacon at Pavia in the year 946, when Berengarius, marquis of Ivrea and regent of the kingdom of Italy, sent him as his ambassador to Constantiople, where he learned the Greek language. After his return he was made bishop of Cremona. Otho I, emperor and king of Italy, sent him in 943 on a mission to Pope John XII.; and in the following year Luitprand accompanied Otho to the council held at Rome, which deposed John and chose Leo VIII. in his place. On his return he was named regent for the king and became the guide of the emperor, who did not understand Latin, as he says in his Chronicle. In 968 Otho sent him as ambassador to Nicephorus Phocas, emperor or usurper of Constantiople, who treated him very curiously, and kept him as a kind of prisoner, and when he wished to return to Italy, Luitprand left Constantiople in the month of October to return to Italy. He died not long after at Cremona, but the precise year of his death is not ascertained.

He was a man of considerable learning for his age, and wrote many works, both in Latin and Greek, which are now lost, as many of the people on the subject is another narrative. Several are extant, with very copious notes, by Jerome de la Hguera and L. Ramirez de Prado, with a dissertation at the end on the Djiphysion Tolsturnam.

LIV

LIVE STOCK. The animals necessary for the stocking and cultivation of a farm, and those which are kept on it for profit, or for the sake of their dung, are called the live stock of the farm, in contradistinction to the dead stock, which consists of the implements of husbandry and the produce thereof. The interest of the farm is the sum of the profit which the whole work of the farm will be done, and the relief which occasional rest will give to the other horses.

The other part of the live stock kept on a farm must depend on various circumstances. Where there is good farming land, the profit on the improvement of the live stock, or their produce, is evident and easily ascertained. But where animals are kept upon artificial food or fattened on stalls, it is often a difficult question to answer, whether there is a profit on their keep or not. In most cases these manures with their dung and litter are sold for the use of which they are kept. If manure could be obtained at sufficient quantities to recruit the land, at a reasonable price...
it might often be more advantageous to sell off all the hay and straw of a farm, and to keep only the cattle necessary to till the ground or supply itself. But this can only be the case in the immediate neighbourhood of large towns. In the country at a greater distance no

mercy can be purchased; it must consequently be produced on the farm; and for this purpose live stock must be kept, even if it is only for market. But the selection of profitable stock than in the improvement of tillage. Some men have made great profits by improving the breed of cattle and sheep, by selecting the animals which will fatten most readily, and by feeding them economically. It requires a careful watch over the stock, and knowledge of stock, and carefully attend all markets within his reach to watch the fluctuation in the prices. It will generally be found that the principal profit in feeding stock is the manure, and to this the greatest attention should be directed. A little much attention will often greatly increase both the quantity and quality of this indispensable substance, and make all the difference between a loss and a profit in keeping stock. [Manure.]

LIVER. The liver is the secreting organ or gland by which bile is discharged; its existence has been traced in a few cases by the hand applied below the ribs on the right side. It is flattened in the vertical direction, is thinner at its anterior than at its posterior border, and its outline, when viewed from above, is irregular. The upper surface, which is convex, is applied to the diaphragm; the lower, which is irregularly concave, lies above and in contact with the stomach, large intestine, and right kidney, has attached to it the gall-bladder, and presents two deep furrows, which divide it into several compartments, termed by anatomists lobes. Of the furrows, one running from behind backwards (the longitudinal fissure) transmitted, during uterine life, the vessel which conveyed the blood from the placenta to the heart of the foetus; it afterward contains merely the cord-like remains of that vessel, now impervious in the greater part of its extent. The second furrow, in the under surface of the liver, is called the transverse fissure, since it crosses the former at right angles, living however chiefly to its right side; it serves to allow the blood to escape when the bile; and also to check the exit of the bile-duets. Like other visera of the abdomen, the liver receives an investment from the lining membrane of that cavity, the peritoneum, which, being reflected from it at different points, forms broad bands connecting the liver with surrounding parts.

The substance of glands generally is constituted of minute ramifications or convoluted canals, closed at their radicle extremity, and communicating only with the principal duct, by which the secretion is conveyed away, and of a great number of blood-vessels which surround the above-mentioned canals in their whole extent, and afford the component matters of the secretion; these matters find their way into the interior of the glandular canals, not by distinct openings from the blood-vessels, but by transudation through their walls. In the human subject all other glands than the liver receive one kind of blood only, namely, arterial blood, from which the components of the secretion are derived, and the organ at the same time nourished, and the only vessels are those which convey away the, and towards which it is rendered venous by the changes it undergoes in the gland. But the liver, like the lungs in man and the kidneys also in some animals, receives two kinds of blood—arterial and venous. The arterial blood in the general way, destined principally for the nourishment of the gland, and venous for a larger quantity, from which the bile is principally formed. The vessel which brings the arterial blood, the hepatic artery, is small, and comes off the aorta [Aorta], together with the arterial blood of the stomach, spleen, duodenum, and omentum. The venous blood is brought back from a large vessel resulting from the union of all the veins returning the blood from the spleen, omentum, pancreas, and gall-bladder, and from the vasa recta directly engaged in the function of digestion, namely, the stomach and intestines. The hepatic artery and portal vein enter the liver at the transverse fissure or furrow of its inferior surface, where the bile-ducts issue, and ramify together with the branches of that duct through the substance of the organ. After the ramifications for the sustenance of the liver, and the secretion of the bile, have been derived from the blood of the two sets of vessels already mentioned, it is returned to the general circulation by a third set, the hepatic veins, which issue from the liver at its posterior border, and immediately veins can be observed.

The ultimate arrangement of these different blood-vessels in the liver is very peculiar: it was discovered a few years since by Mr. Kiernan. When the substance of the liver is torn, it is seen to be composed of innumerable granules of blood, each containing blood of four different elements. They are connected most intimately with the branches of the hepatic vein, a small twig of which is contained in the interior of each, while on their exterior surface and in their interstices run branches of the portal vein, and hepatic artery, and bile-duct. The mass of each granule or lobule is constituted in great part of a close network of capillary blood-vessels, which communicate on the exterior with the small branches of the portal and on the interior with the twig of the hepatic vein. The blood is conveyed through the hepatic veins, a capillary network of each granule or lobule of the liver, and after yielding in it the constituents of the bile, is received into the branches of the hepatic vein, whence it is transmitted to the general circulation. The branches of the hepatic artery soon become very minute on the exterior of the lobules, and few can be traced into their interior; it is probable that, after having nourished the coats of the vessels and ducts, and other tissues of the liver, the blood of the hepatic artery is supplied through the bile-duets formed by the ultimate division of the portal vein, and contributes with the blood of that vein to yield the constituents of the bile.

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

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

The gall-bladder is a pyriform membranous sac, lodged in a shallow depression at the inferior surface of the liver, which contains as much as we have described the excretory duct of the liver, by means of a tube called the cystic duct. At times, when a supply of bile is not required in the intestinal canal—for instance, during fasting—the bile flowing from the liver is impeded in its progress through the ductus communis choledochus, and consequently is obliged to regurgitate through the cystic duct into the gall-bladder, which serves as a temporary reservoir for the secretion, discharging it again when the presence of bile is required in the intestine to aid the digestive process.

At the neck of the gall-bladder, close to its termination in the cystic duct, the lining membrane forms a spiral fold, which seems destined to retard the flow of the bile from the reservoir. The gall-bladder is not constant in its size and shape. Some animals do not exhibit it at all; for the most part, though not universally, herbivorous, and such in which digestion is constantly going on, and a reservoir for bile consequently not required. But many herbivorous animals have a gall-bladder; and sometimes where it is absent, it becomes a common site of dilation and dilatation of the cavity near the intestine: such is the case, for example, in the horse and elephant.

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

Bile

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

LIVER, DISEASES OF. The liver is subject to all those general morbid changes which, depending on disorder of the nervous vessels, modification of the nutritive process, or alterations in the blood itself, may affect most organized parts of the body; such as inflammation (hepatitis), acute and chronic, hyperthermia and atrophy; inunction and softening; and the different kinds of tumors or foramina of tissue, carcinomas, or cancerous, medullary sarcoma, fungus hematomas, melanosarcoma, and scirrhouous tuberela. It is occasionally infested by parasitic animals (hydatides), which may likewise affect other parts of the body.

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

Acute hepatitis, when it exists in a severe degree, is indicated by a variety of symptoms, including fever, headache, muscular weakness, general lassitude, bad appetite, sleeplessness, and often a metallic taste in the mouth. In children, who are most frequently affected with this disease, it is often accompanied by cough and diarrhoea. The liver is swollen and tender, and the skin is flushed and very hot. The tongue is of a redder hue than usual, and its coating is thick and white. The breath is offensive. The pulse is rapid and thready. The urine is thick and dark, and the stools are light and offensive. The disease is often accompanied with a violent-looking colic, during which the bowels are constantly opened. The hair is frequently discoloured, and the skin becomes thick, hard, scurfy, and of a yellowish cast. The disease generally terminates in death, and is often followed by jaundice.

Chronic hepatitis is a less violent form of this disease, which is characterized by its duration, and the gradual and insidious manner in which it attacks the liver. It is very common, and is frequently attended with a constitutional change, which, by degrees, impairs the health and strength of the individual, and reduces him to a state of languishing and feebleness, which from its gradual and insidious nature, is often neglected. The symptoms of this disease are not so obvious as those of acute hepatitis, and are often not noticed by the patient. The liver becomes enlarged and tender, and the skin is more or less yellowish. The symptoms of jaundice are sometimes present, and the urine and stools are of a darker hue than usual. The diseases of the liver, which are accompanied with a constitutional change, are known as bile yellow, or jaundice, and are occasioned by several causes, the principal of which are the inflammation of the bile and its duct, and the obstruction of the latter. The bile yellow is characterized by a yellowish appearance of the skin and eyes, and a constant feeling of lassitude, which is often accompanied with a desire to sleep. The urine is dark, and the stools are light and offensive. The liver is enlarged, and the skin is often thick and scurfy. The disease generally terminates in death, and is often followed by jaundice.

The bile yellow is a fall prey seasonable attendant on jaundicemorphathy: it cannot be recognised by any signs during life. The liver in man, as in many animals, particularly the abrog-
as we have said, subject to the seat of parasitic
being creatures—lydatis. These are generally contained
in great numbers in a firm general cyst, which not uncom-
monly protrudes externally, and bursts, or is opened by a
lance, when numerous polypi, bladder-like bodies of dif-
ferent sizes, floating in a transparent fluid, escape.

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

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

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

No mention is made in Liverpool in Domesday-book,
though it contains the names of several places in the vicinity,
and also the grant of all the parts between the Ribble and
the Mersey to Roger of Poyntz, by whom it is said the
castle of Liverpool was built. This was probably the
original site of the present town, which is now second in com-
mercial importance to London only. An act was passed in
1559 for demolishing the castle of Liverpool, on the site of
which St. George's church now stands.

In 1173 the town received its first charter from Henry
II., a mark of royal favour conveyed by the importance
of the place as a means of communication with Ireland. A
second charter was received from John in 1207; and a third,
constituting it a free borough for ever, was obtained from
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1559 for demolishing the castle of Liverpool, on the site of
which St. George's church now stands.

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

The number and classification of houses in the borough,
assessed to the poor rate in 1834-5, were as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Houses</td>
<td>6,715</td>
<td>£2,192</td>
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<tr>
<td>Cottages</td>
<td>135</td>
<td>£61</td>
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<td>Dwellings</td>
<td>135</td>
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<td>£9,722</td>
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<td>Sheds</td>
<td>204</td>
<td>£20,750</td>
</tr>
<tr>
<td>Stacks</td>
<td>30</td>
<td>£11,616</td>
</tr>
<tr>
<td>Carts</td>
<td>1,056</td>
<td>£11,816</td>
</tr>
<tr>
<td>Wagons</td>
<td>10</td>
<td>£21,578</td>
</tr>
<tr>
<td>Horses</td>
<td>1,572</td>
<td>£12,564</td>
</tr>
<tr>
<td>Oxen</td>
<td>2,443</td>
<td>£18,650</td>
</tr>
<tr>
<td>Cows</td>
<td>949</td>
<td>£13,286</td>
</tr>
<tr>
<td>Sheep</td>
<td>414</td>
<td>£6,913</td>
</tr>
<tr>
<td>Pigs</td>
<td>351</td>
<td>£6,669</td>
</tr>
<tr>
<td>Sheep</td>
<td>296</td>
<td>£5,920</td>
</tr>
<tr>
<td>Hogs</td>
<td>6,312</td>
<td>£247,390</td>
</tr>
<tr>
<td>Cows</td>
<td>28,665</td>
<td>£471,896</td>
</tr>
<tr>
<td>Catties</td>
<td>1,024</td>
<td>£118,616</td>
</tr>
<tr>
<td>Breweries</td>
<td>3,425</td>
<td>129,856</td>
</tr>
</tbody>
</table>

Total: 33,202

720,377

No considerable town in England has received greater
improvement during the past half-century than Liverpool.
Before that time the streets were narrow and inconvenient,
and the buildings were wholly devoid of architectural
beauty, but successive alterations have been given to the town an
amount of commodiousness and elegance not to be met
with in any other commercial port in this country. This
altered condition has been produced by the exertions of the
corporation, in whom is vested the property of a great pro-
portion of the houses, and to which the lessees of those have progress-
ably fallen in, they have been renewed only on the con-
dition of expending the sums necessary for the required
embellishment. The value of the corporation estates is
estimated at three millions of money, and the annual income
derived from rents and dock-dues has of late increased to
L I V

upwards of 330,000/. A great proportion of this income has been devoted to the improvement of the town, including the building of churches, hospitals, and other charitable and public edifices. The sum expended in these objects, including the cost of works and objects, between 1725 and 1838, is stated to have amounted to 1,668,500/.

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

The ground-floor of this building contains the council-room, several committee rooms, the mayor's, town-clerk's, treasurer's, and town-surveyor's offices. The principal room was given by the corporation, which already contains a very fine suite of rooms, which are magnificently furnished. The saloon is 30 feet 6 inches long and 26 feet 6 inches wide. The two drawing-rooms are respectively 29 feet and 30 feet 3 inches long, and 27 feet wide. The large hall, each 30 feet 6 inches long, is 26 feet 6 inches wide, and 40 feet high; the second hall-room is 61 feet by 28, and 25 feet high; and the banquet-room, in which the mayor receives his guests, is 50 feet by 30, and 25 feet high. The whole of these rooms is illuminated with stained glass.

The staircase is lighted by means of a dome with lateral windows: the height from the floor of the building to the centre of the dome is 106 feet. The staircase is ornamented by a colossal statue of Canning, by Chantrey, and surrounding the dome is a colossal figure of Britannia.

The Exchange buildings form with the town-hall three sides of a quadrangular area, which is used by the merchants of Liverpool as an Exchange. This quadrangle is 197 feet long from north to south, and 178 feet wide; it therefore contains an area of almost 0.17 acres, which is more than twice the size of the recently destroyed Royal Exchange of London.

The buildings which form the west side of the area are occupied as offices by merchants; while the east side comprises a news-room, 94 feet by 32 feet, which is frequented by the merchants and brokers; and an underwriting room, about of somewhat smaller dimensions. The architecture of the two wings harmonises with that of the town-hall. In the centre of the area is a bronze monument, erected in honour of Lord Nelson. This monument, which is executed in bronze, is 30 feet 6 inches high, and is supported by a pedestal, figures emblematical of Nelson's principal victories. The statue of the dying admiral rests one foot on a prostrate enemy, and the other on a cannon; and he is receiving upon his sword a naval crown from Victory.

The town-hall contains the council-room, the register-office, the excise-office, and where it is intended shortly to place the post-office and the office for the distribution of stamps, is situated on the site, now filled up for that purpose, of the old dock. The land on which it stands, valued at 99,000/, was sold to the corporation, which already took to expend 175,000/. in the erection of the building, under an agreement with the government, by which, in consideration of 150,000/., to be paid by annual instalments of 25,000/., the corporation were to make over the property to the government at the end of twenty years. The extreme length, measuring from east to west, is 465 feet 8 inches. The principal front faces the north, and in the centre there is an octostyle Ionic portico, containing six columns five feet square, and at each end are projecting wings, each of which is 94 feet wide.

The basement is used for storing bonded goods; the west wing is occupied by different offices of the custom-house; and the centre contains the 'long-room' of that establishment. This large room is 100 feet long: the passages and staircases of the wings are lighted by means of two smaller domes. The height of the rooms in the principal story is 20 feet, in the second story 21 feet 6 inches, and in the attics 14 feet 8 inches.

Liverpool contains 28 churches, some of which are hand-

some modern buildings; besides numerous chapels and meeting-houses, belonging to the Roman Catholics and various denominations of Protestant Dissenters. The church dedicated to Saint Nicholas, the tutelar saint of mariners, according to the Roman calendar, is the oldest place of worship in Liverpool, having existed as a chapel-of-ease under Walton parish before the town became a separate parish; it stands near the river, at a short distance from the town-hall. The body of the church was rebuilt in 1774; and the tower, consisting of a quadrangle 50 feet in height, is covered with a steeple in the modern style: it has a bell of twelve bells. Many of the churches were built with the funds of the corporation, but others have been erected at the cost of private individuals under private acts of parliament. The town contains many many large and commodious buildings, which is one of the best managed in the kingdom, is almost like a little town; it will accommodate about 1600 people; a 24-bed hospital belongs to it. The infirmary, originally opened in 1766, was rebuilt on a better site in 1834 at the cost of 27,000/. There is also a grammar school for female patients. The lunatic asylum, which is capable of accommodating 60 patients, is a neat and commodious building, with spacious cells and day-rooms, and furnished with warm baths. The foundation stone of this asylum was laid in January, 1829, and the building was completed at the expense of about 11,000/. A building previously used for the same purpose is now used as a barrack. Besides these there are two smaller hospitals, two dispensaries, and an opthalmic hospital, for the treatment of diseases of the eye. The hospital for the poor, begun in 1769, has accommodation for 250 boys and 100 girls, which includes board, board and clothed gratis. There are also charitable schools for the blind, and for the deaf and dumb, two corporation fee-schools, and numerous other schools supported by various denominations of Christians. The Mechanics' Institution in Mount Street is built on ground given by the corporation, and cost 11,000/. The theatre, or lecture-room, will contain 1200 persons; it was publicly opened during the visit of the British Association at Liverpool in 1857. Attached to this institution are schools, in which, for very moderate charges, boys receive an education according to the station which they are intended to occupy. There is no town in the kingdom in which, in proportion to its size and population, is better provided than Liverpool with scientific and literary institutions. The Royal Institution, formed in 1814 by Mr. Roscoe, by shares or subscriptions of 100£ each, was opened in 1817, and in 1822 the subscribers were incorporated by royal charter.

The building has a frontage of 146 feet, and contains an assembly-room, a library, a test-room, and a lecture-room, capable of accommodating 500 persons. The second and third stories of the building are occupied by the Museum of Natural History, which is the largest and most valuable in that part of the kingdom. The instrument of a large selection of ancient and modern instruments, the Æginæ Marbles and the Phigaleian Friese, and an extensive collection of philosophical apparatus. Courses of lectures are given on literature, on the various branches of physical science, and on the different branches of medical knowledge. There is also a grammar school and a library attached to the institution. The Literary, Scientific, and Commercial Institution was set on foot in 1835 by a few young men engaged in commercial pursuits, and already contains a library of 2200 volumes. It is supported by an annual subscription of 500£, and although it was erected at a cost of 2400£, they have the advantage of a news-room, lectures on various literary and philosophical subjects, and classes for the acquisition of languages and other branches of learning. The Medical Institution, recently built at the cost of about 3000£, contributed chiefly by members of the medical profession, contains a museum and library, and comprises various halls and committee-rooms, and a theatre capable of holding 500 persons.

The borough hall is a large building, on the plan recommended by Mr. C. S. Blomfield; it has been praised for its effect in the confinement of debtors. The County House of Correction at Kirkdale stands within the limits of the borough; it contains more than 400 cells, and is calculated for the reception of 500 prisoners. This establishment was formerly situated at Preston, but it has now been removed to the west part of the town, and the proportion of the prisoners being furnished from its population, a considerable expense in their conveyance would by that means be saved to the county.
The market-places in Liverpool are upon an extensive scale. Saint John's Market, which stands in the centre of the town, covers a space of 1½ acres, being 550 feet long and 135 feet wide, the whole under one roof, supported by 116 pillars. Meat, poultry, fruit, and garden vegetables, are daily sold in this market, but the principal market-days are Tuesday, Thursday, and Saturday. The fish-market is on the opposite side of the street in which Saint John's Market stands. There are several smaller market-places in different parts of the town.

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

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

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

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

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

1836. 1837.
Householders paying rates . 10,252 10,715
Freemen 3,197 3,175
13,449 13,890

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

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

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

<table>
<thead>
<tr>
<th>Years</th>
<th>Customs Receipt.</th>
<th>Years</th>
<th>Customs Receipt.</th>
<th>Years</th>
<th>Customs Receipt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1753</td>
<td>638,668</td>
<td>1805</td>
<td>1,266,749</td>
<td>1850</td>
<td>3,669,114</td>
</tr>
<tr>
<td>1759</td>
<td>523,961</td>
<td>1809</td>
<td>1,266,776</td>
<td>1852</td>
<td>3,599,936</td>
</tr>
<tr>
<td>1762</td>
<td>248,019</td>
<td>1815</td>
<td>2,830,957</td>
<td>1854</td>
<td>3,265,649</td>
</tr>
<tr>
<td>1766</td>
<td>389,625</td>
<td>1820</td>
<td>1,486,072</td>
<td>1856</td>
<td>2,733,139</td>
</tr>
<tr>
<td>1770</td>
<td>391,994</td>
<td>1824</td>
<td>1,964,625</td>
<td>1858</td>
<td>2,466,306</td>
</tr>
<tr>
<td>1775</td>
<td>274,685</td>
<td>1828</td>
<td>3,057,577</td>
<td>1860</td>
<td>2,372,249</td>
</tr>
<tr>
<td>1780</td>
<td>189,895</td>
<td>1832</td>
<td>3,390,439</td>
<td>1862</td>
<td>1,918,927</td>
</tr>
<tr>
<td>1785</td>
<td>850,928</td>
<td>1836</td>
<td>3,180,099</td>
<td>1864</td>
<td>1,524,201</td>
</tr>
<tr>
<td>1790</td>
<td>469,438</td>
<td>1840</td>
<td>2,216,546</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The growth of the trade of Liverpool has been further shown by the number of vessels unloaded in the docks, and the amount of dues collected on the same.

The number of ships unloaded and amount of dues collected in each of the years ending 24th of June, 1837 and 1838, were:

<table>
<thead>
<tr>
<th>Years</th>
<th>Ships.</th>
<th>Dock Dues.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1837</td>
<td>15,038</td>
<td>£191,330</td>
</tr>
<tr>
<td>1838</td>
<td>14,820</td>
<td>161,843</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th></th>
<th>British.</th>
<th>Foreign.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sh.</td>
<td>Tons.</td>
</tr>
<tr>
<td>Europe, generally</td>
<td>548</td>
<td>81,739</td>
</tr>
<tr>
<td>Asia</td>
<td>96</td>
<td>24,069</td>
</tr>
<tr>
<td>Africa</td>
<td>133</td>
<td>47,719</td>
</tr>
<tr>
<td>America, &amp;c.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>British Northern Colonies</td>
<td>328</td>
<td>146,588</td>
</tr>
<tr>
<td>West Indies</td>
<td>197</td>
<td>51,830</td>
</tr>
<tr>
<td>Foreign West Indies</td>
<td>12</td>
<td>2,298</td>
</tr>
<tr>
<td>United States</td>
<td>161</td>
<td>64,841</td>
</tr>
<tr>
<td>South American States</td>
<td>210</td>
<td>47,944</td>
</tr>
<tr>
<td>Total</td>
<td>1,685</td>
<td>467,127</td>
</tr>
<tr>
<td>Europe, generally</td>
<td></td>
<td>1,735</td>
</tr>
<tr>
<td>Asia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Other Coasters</td>
<td>2,002</td>
<td>440,396</td>
</tr>
<tr>
<td>Total</td>
<td>10,281</td>
<td>1,390,809</td>
</tr>
</tbody>
</table>

The number of actual electors is not so great as is indicated by the registers, because some names are entered in both capacities. The number who gave their votes at the general election in 1837 was 9091, of whom 6670 were householders, and 2421 were freemen.
It will be seen from this statement that very nearly two-fifths of the tonnage inwards and outwards are engaged in the trade with the United States of America, and that of the shipping so engaged nearly four-fifths are under a foreign flag. It will be further observed, that the intercourse with Ireland is about 30,000 and in amount to that kept up with every port in Great Britain.

Liverpool has benefited more than any port in the kingdom (London alone excepted) from the application of steam-power to navigation. Steam-ships of the first class proceed to and from Liverpool to Dublin daily. The Drogheda to Sunderland intercourse is kept up four times a-week; with Belfast three times a-week; with Waterford, Newry, and Londonderry, twice every week; with Glasgow daily; with the Isle of Man, Beaumaris, Bangor, Menai Bridge, and Carnarvon, as frequently as they can. On an average day the Mersey is lightened by steam-conveying passengers to and from the towns and villages on the opposite side of the river.

The inland trade of Liverpool is much assisted by means of canals, the most important of which in extent is the Leeds and Liverpool canal, 128 miles long. The Mersey and Irwell navigation served until the opening of the Liverpool and Manchester railroad for the conveyance of bulky and heavy goods to and from Manchester. The Duke of Bridgewater's canal connects the Mersey with Bury, and joins the Grand Trunk Canal, thus perfects the communication with London. The trade with North Wales, through the western part of Cheshire, is carried on by means of the Ellesmere canal, and the river Dee navigation connects the Mersey with the district of Flint and part of Cheshire. [CANALS.] The modern adaptation of iron railways for the rapid conveyance of goods and passengers was first brought into practical operation by the Liverpool and Manchester railroad, which was opened for use in September, 1830. The traffic upon that line from that time to Midsummer, 1836, since which date such particulars have not been made public, was as follows:

<table>
<thead>
<tr>
<th>Merchandise</th>
<th>Coal</th>
<th>Passengers, Tour.</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 16 Sept. to 31 Dec. 1830</td>
<td>1,433</td>
<td>2,630</td>
</tr>
<tr>
<td>1 Jan. to 30 June 1831</td>
<td>25,486</td>
<td>8,796</td>
</tr>
<tr>
<td>1 July to 30 June 1832</td>
<td>72,801</td>
<td>6,146</td>
</tr>
<tr>
<td>1 July to 30 June 1833</td>
<td>60,980</td>
<td>12,840</td>
</tr>
<tr>
<td>1 July to 30 June 1834</td>
<td>86,457</td>
<td>14,177</td>
</tr>
<tr>
<td>1 July to 30 June 1835</td>
<td>98,164</td>
<td>19,182</td>
</tr>
<tr>
<td>1 July to 30 June 1836</td>
<td>104,356</td>
<td>46,039</td>
</tr>
<tr>
<td>1 July to 30 June 1837</td>
<td>113,647</td>
<td>53,444</td>
</tr>
<tr>
<td>1 July to 30 June 1838</td>
<td>117,917</td>
<td>60,903</td>
</tr>
</tbody>
</table>

1,092,120 449,226 2,930,267

From these figures, which do not include great numbers of cattle, sheep, and swine conveyed from Liverpool towards the interior of the country, it appears that in less than six years there were conveyed upon this railway nearly two millions and a half of passengers, and but little short of one million and a half of tons of merchandise and coals. Exactly one century before the opening of this line, the town of Liverpool contained only one carriage, and no stage-coach came nearer to the town than Warrington, the traffic being then principally carried on by means of pack-horses. In 1760 there was only one stage-coach between Liverpool and London, and the journey required four days; the first mail-coach to London began to run on the 25th July, 1753. Now that the time required for the performance of this journey has been reduced, by means of the Grand Junction and Birmingham railways, to a ride of ten or eleven hours, the number of passengers must be reckoned by hundreds of thousands in the year, an alteration which adds another and effective element towards the continued growth and prosperity of Liverpool.

It appeared from the annual bills of mortality printed at Easter, 1838, that the number of baptisms in the town and vicinity during the year was 10,143, the number of marriages 2,917, and of deaths 1,273, or 0.5. Of the births and baptisms, there were belonging to the Established Church, 6,273

<table>
<thead>
<tr>
<th>Roman Catholics</th>
<th>Presbyterians</th>
<th>Baptists</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,917</td>
<td>1,166</td>
<td>62</td>
</tr>
</tbody>
</table>

Indepedents 128, Unitarians 2, Methodists 107

Friends 13, Jews 33, other Dissenters 409 315

10,143

Of the deaths in the parish, 6,587 in number, there were—

LIVIA. [Augustus.]

LIVIUS, with his full name, LUCIUS LIVIUS ANDRONICUS, was the first person who introduced the Latin language into literature. (Brut. c. 18.) He is said to have been the slave and afterwards the freedman of M. Livius Salinator. The time and place of his birth are uncertain; but his first play was probably exhibited in 248 B.C., in the year before Emmius was born. (Cic., Brut., c. 18.) Livius was born at Aricia; and the school of rhetoric he received his education in was that of Quintus Estius. (Liv. xvi. 2.) We learn from Livy the historian, that he acted in his own piece, and that after his voice failed him, in consequence of the audience frequently demanding a repetition of their favourite passages, he introduced a boy to repeat them for him. (Liv. xvi. 2.) The fragments of his works, which have come down to us, are too few to enable us to form any opinion respecting them: Cicero says that they were not worth being read a second time. (Brut. c. 16.) They were probably lost at the time of the fire, and were not performed, and continued to be read in schools till a much later period. (Hor. Epist, ii. i. 69-71.)

The hymns of Livius were sung on public occasions, in order to avert the threatened anger of the gods. (Liv. xxxviii. 1.) For this he was distinguished in the second Punic War, by the public recitation of a hymn which he had composed. Livius wrote both tragedies and comedies: they are not extant, for if any of them were from his time, they have been chiefly taken from the Greek writers. The titles, which have been preserved, are—Achilles, Adonis, Ajax, Ajax, Adromeda, Antiope, Centauri, Equus Trojanus, Helen, Hermon, Ino, Lydus, Proteus, Theba, Serenus, Terris, Troias.

LIVIUS, TITUS, the Roman historian, was born at Patavium (Padua), B.C. 59. We possess very few particulars respecting his life. He appears to have lived at Rome, and to have been on intimate terms with Augustus, who included him in the circle of the Tacitus (Augustus) his chief confidence. It is probable that the distinguished honour to Livius, in consequence of the success which attended their arms in the second Punic War, to the public recitation of a hymn which he had composed. Livius wrote both tragedies and comedies: they are not extant, for if any of them were from his time, they have been chiefly taken from the Greek writers. The titles, which have been preserved, are—Achilles, Adonis, Ajax, Ajax, Adromeda, Antiope, Centauri, Equus Trojanus, Helen, Hermon, Ino, Lydus, Proteus, Theba, Serenus, Terris, Troias.

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The fragments of the lost books, which have been preserved by grammarians and other writers, are given in Drakes's edition of the 13th book. This portion of Roman history which was
LIV contained in the lost books has been written in Latin by Livy. He is a master with considerable diligence, and has published in the Delphic and Bipontic editions, together with the extant books.

We have no means for ascertaining at what time the whole of the history was completed, though there are indications that it was at least partly written in the 1st century. In i. 29, Livy mentions the first flowering of the temple of Juno by Augustus after the battle of Actium, n.c. 29; whence we may conclude that the first book was written between this year and n.c. 25, when it was closed a second time. He must also have been engaged on the 59th book after n.c. 18, since the law of Augustus, De maritandis ordinibus, passed in that year, is referred to in the epilogue of the 59th book.

The fame of Livy appears to have been widely extended everywhere. We may believe a story related by Pliny (Ep., ii. 3), and repeated by Jerome, that a native of Cadiz came to Rome with the sole object of seeing the great historian. Tacitus (Ann., iv. 34) and Seneca (Sousor., viii.), among the later Roman writers, speak in the highest terms of the beauty of his style and the fidelity of his history—praises which have been constantly repeated by modern writers. But while most will be ready to admit that his style is eloquent, his narrative clear, and his power of description great and striking, it can scarcely be doubted that he was much too zealous in the respect of propriety, and too anxious to the requisites of a faithful historian, a love of truth, diligence and care in consulting authorities, and a patient and pains-taking examination of conflicting testimonies. His chief merits and defects as a historian have been ably drawn by Professor Macaulay in his life of Livy. He has not the power of the imagination of a great historian, to dazzle the imagination or interest the feelings of his readers, is a warning against implicit belief. He excelled in narration and in the eloquent expression of excited feelings, and he obviously delighted in the exercise of his genius. His writing, however, is far from being single and detached, but bears the weighty influence of the great Augustus, or his immediate successors, the shortness of whose lives would be single and detached, could bear but a very small ratio to the bulk of the history, and would not affect its general spirit. But the very tone and manner of Livy's work, however great may be his power of description, however elevated the language, and however long the sentences, or whatever may be the power of the imagination, there is less desire to ascertain the truth than to array the popular story in the most attractive garb. He is not so much an historian as a poet. As the history advances, and the truth of facts is better ascertained, he is of course compelled to record the facts in a less poetic language. His whole work is a triumphal celebration of the heroic spirit and military glory of Rome. Here then is a disturbing force which has borne him away from the strict line of historical truth. To this desire of exalting the glory of his country (and no doubt to a similar impulse actuating those from whom we copied) we must ascribe the singular phenomena which appear on the face of the history—that in perpetual wars with the surrounding states, the Romans some time or other appear in the history. (i.e. 14); that when they were distressed, it was always by precedent gone famine, or sedition; and that at such seasons their enemies abstained from attacking them; that they gained victory after victory without subduing their opponents; that taken cities were not allowed to reappear in the history. This habits of consuls and dictators triumph in succession over nations that are still able to supply subjects for new triumphs to new consuls and dictators; that slaughters, which must have exhausted any state of antient Italy, diminished not the number of their perpetually renovating and conquering. To this passion for extolling the military reputation of Rome we owe the comparative neglect of the less popular and less ostentatious subjects of domestic history. Every war and triumph, of which any memorial, true or false, existed, is recapitulated repeatedly in the annals of the city, and the state, the divisions of its citizens, their several rights, the contests between the orders, the constitution of the general or partial assemblies of the people, the powers of the magistrates; the laws, the jurisprudence, their progressive elaboration; the appearances of the people, the foundation of the state, the foundation of the people, the growth and decline of the city, is vague and scanty and ill-connected. It is evident that to the mind of Livy they possessed comparatively little interest; and that on these matters, to say the least, he did not exert himself to correct the errors or supply the defects of the writers who preceded him. He was not at all desirous of popular commotion he could extract the materials of an eloquent speech. It is a sufficient proof that on this most important portion of Roman history he was really ignorant, that with all his powers of language he does not convey clear and vivid ideas to the minds of his readers. Who has risen from the perusal of the early books of Livy with the distinct notion of a client or of an agrarian law?
In addition to the history of Rome, Livy wrote several other works, which have not come down to us; amongst which Scenae (Ep. 169) mentions the names of Livy, the historian; and Quintilian (Inst. Orator. x. 1), a letter to his son, recommending the study of Dei-mothaeus and Cicero.

The best editions of Livy are those by Crevel (1735-1740; Drakenborough, 1739-1746; firm of E. Reclus, 1864; Burthek, 1872-1875; and Gilano (1775); and Kleinig, 1823-1827. His Roman History has been translated into most European languages; but we are not aware of any one which gives a faithful representation of the original work: the most esteemed are the translations in German by Wagler (1764); and Italian by Naris (1759); in English, by Baker (1797); and in French, by Duc de la Male and Noel (1810-1812; and 1824).

LIVONIA (Livland; in German, Liefland), is one of the Baltic provinces of European Russia, bounded between the 56° and 59° N. lat. and the 17° and 23° 20' E. long. It is bounded on the north by Estonia (or the government of Reval), on the north-east by Lake Peipus, on the east by Pakow, on the south-east by Vitepse, on the south-west by Courland, and on the west by the Baltic, which contains the great end of Osel, and some smaller ones belonging to this province. The area, according to Schubert, is 20,708 square miles; but other writers make it only 17,150 or 17,560 square miles. The province derives its name from its first inhabitants, the Livens, who were ruled by the Russian czar, whose race is now extinct, or confined with the Estonians and the Lettomonos (Lettens). The surface is on the whole level and gently undulating, with here and there some hills, which rarely exceed 100 feet in height. There are great marshes, the best grew of the whole province is the Messenborg near Wenden, which rises to the height of 1200 feet. Lithuania is covered with vast forests, lakes, rivers, meadows, marshes, and heaths. The soil on the sea-coast (which is bounded by a narrow belt of hilly land), in some places, is sand, sand, clay, loam, and moorland alternate; but there are also many very fertile tracts. In the east the appearance of the country is not pleasing; the better portions are in the south, especially on the banks of the Duna, where there is some very fertile soil. Most of the forests and marshes are in the west. The Baltic forms the great bay of Riga, between the continent and the island of Osel.

Of the lakes 1120 in number, the most considerable are—the great lake of Peipus, united by a narrow channel with that of Lake Vitepse; and the other lakes are small in extent, in the centre of the province, which is connected by the Great Embach with lake Peipus. The following are smaller, viz.:—lake Burtsew, from which the river Salis issues, and runs into the Bay of Riga; and lake Marien, in Felin, Luban, Stinepo. The principal river is the Duna, which is the boundary between Livonia and Courland till it reaches Kirchkholme, where it changes its direction, and empties itself at Dinamunde, below Riga, into the bay of Riga. It receives on the left the Bul EX, which runs from Courland along the Bay of Riga and falls into the Duna near its mouth. Other smaller rivers are—the An, which rises in the circle of Wenden; the Salis; the Pernau, which empties itself at Pernau into the bay of Riga; the Embach, which flows into lake Witzier which it leaves as a navigable stream under the name of the Great Embach, and runs into lake Peipus. The smaller rivers and streams are near 300 in number.

Livonia is disagreeable, being cold and raw till the end of May, but very hot in the three summer months, with frequent thunderstorms. September has often some fine days, though occasionally with night frosts. On the whole the weather is very changeable and unsettled.

The agriculture is of great importance. The country produces corn, chiefly rye and barley, flax, hemp, and linseed. The fruit, such as apples, plums, and cherries, is very indifferent. There are some good horses on the estates of the nobles, but those of the peasants are small and of low quality. The horned cattle are small; sheep of the German breed keeps very well; the smaller nobles: the peasants have an inferior breed, the coarse black wool of which is manufactured into cloth. Goats, swine, and domestic poultry are kept chiefly by the nobles, citizens, and clergy. There is abundance of game, white and grey hares, and especially feathered game; of beasts of prey there are bears, wolves (in large numbers), lynxes, and otters. The birds include various kinds of wildfowl, such as martins, badgers, and squirrels. On the islands and sea-coast seals are taken, and fish of various kinds are abundant, especially in lake Peipus. There are no metals. Potters clay and limestone are obtained in some parts. There are several villages, which have been built by the country people spin yarn and thread, and make coarse cloth, linen, and wooden wares. The hand-embroideries are numerous. The exports are corn, hemp, flux, and linseed; the imports salt, iron, tea, colonial produce, wine, manufactured goods, and the like.

The population, according to the latest accounts we can procure, is 754,000, consisting of—1st, 330,000 Latins in the circles of Riga and Wenden, who probably settled here at the beginning of the twelfth century, and expelled the Livs; 2nd, 390,000 Latins, who are not of an entirely original, but not very numerous, and speaking a peculiar Slavonian dialect, and on the whole more polished in their manners than the Estonians. They are chiefly peasants. 3rd, Livs, or Livonians, now formed with the other inhabitants, but of whom there may be 1800 in some villages in Wenden, who speak their own language, a dialect of the Finnish. 3rd, Estonians, in the circles of Dorpat, Parnaw, and Arensburg, wholly resembling their brethren in Estonia, about 350,000. 4th, the religious community, which is not yet reduced to submission till Peter the Great was able to assert his rights to these provinces. Livonia was almost unknown to the rest of Europe till 1128, when some traders from Bremen, in search of a new commercial intercourse with the north, were driven, on their voyage to Wabzy in Gotland, upon the coast of Livonia. The people of Bremen therefore saw the country more and more frequently for the purposes of trade, and even formed settlements in it. In 1186 Mervard, an Augustinian monk, with other Germans, settled in Parnaw, and others in Courland, and the monarchy became the first bishop. But Albrecht, the first bishop, who came with a new company of adherents to the Duna was the first who was able to establish his spiritual authority on a secure foundation. He built in the year 1200 the town of Riga, and fixed his see there.

Towards the end of the century Cunthe VI, king of Denmark, made himself master of these provinces, which Wabsmark III, one of his successors, ceded for a sum of money to the Teutonic order, which was united with the Order of the Teutonic Knights by Wartislaw, who was 281 by bishop Albrecht, so that the Teutonic Knights remained in possession of four provinces. At length the weakness of the Order, which was unable to resist the czar Ivan II, Wasilijewitsch, who sought to recover those provinces that had been detached from the Teutonic empire, caused the complete dissolution of the whole state. Estonia placed itself under protection of Sweden; Livonia was united with Poland; Courland and Semigallia became a duchy under Poland, which Gottshall-Kettler, the last grand-master of the Teutonic order, obtained. As a fact the state of the country was as if it belonged to the Tsar of Russia; so that the Livs became the apple of discord for Sweden, Russia, and Poland; disputed for a century (1561 to 1660). By the treaty of Oliva, in 1660, Poland ceded those provinces to Sweden and they were united with Estonia. By the treaty of Nystad (1721), Livov and East Prussia were confirmed and annexed to the Russian empire.

Livonia is divided into five circles, those of Riga, Derry, Arensburg, Parnaw, and Wenden.

(De Bray, Essai sur l'Histoire de la Livonie, 3 vol.; Du pat, 1817; Hassel, Erdbeschreibung, &c.)

LIVONIECA. (Isoroda, vol. ii, p. 92.)
LIVORNO, called by corruption Leghorn by the English, and Livourne by the French, is a seaport town on the west coast of Italy, in the grand-duchy of Tuscany. It stands at the southern extremity of a low and partly marshy plain, which extends from the loft bank of the Arno to the hills of Montenore, which are a projection of the ridge which separates the marsh and the ditches from that of the Ombrone or Maremma of Siena. The towns of Montenore end abruptly on the sea about three miles south of Livorno; they are naturally stony and barren, but the slope towards Livorno is covered with country houses and gardens, with grounds, woods, and meadows. The merchants and their families during the summer, and have a fine seaside, which embraces the town and the Apennines to the north towards the Gulf of the Spezia, the islands of Gorgona, Capefri, and Elba, and the mountains of Cape Corso, of Cape Tocco, and the commune of Capoliveri and Colli, which is 14 miles south by west of Pisa, and 45 by west by south of Florence, in 43° 33' lat. and 16° 19' E. long.

The town is neatly and regularly built; the streets are wide and mostly straight, and there is a fine square in the middle of the town. The western district, called La Nova Venezia, is intersected with canals, by which the goods are carried in boats from the shipping in the harbour and landed before the warehouses of the merchants. Many of the private houses are handsome, united Italian outward architecture from the Sardan, and are surrounded with goods, and fitted up in good taste. Of all the towns in the Mediterranean perhaps Livorno most resembles an English town; the inhabitants are, by long intercourse, familiar with the English, and well disposed towards them, and are as honest and industrious as any in Italy. The adjacent country is surrounded by many of the natives. The people are active, steady, and peaceably inclined. A greater tolerance exists here than in any other part of Italy: the English and Lutherans have chapels and burying-grounds, the Greeks a church, and the Jews the old Sardan, and ditches, and fortifications, which the English have called Porto, the Dominions of Livorno, and Porto, the Dominions of Livorno, which are nearly 500 acres in extent, and are surrounded by walls, ditches, and a regular system of fortifications. Livorno is entirely a commercial place: it has however a casino, or assembly-house, a theatre, numerous good inns and coffee-houses, and the vicinity of Pisa affords the opportunity for a pleasant drive and an interesting excursion. Elements of importance and celebrity have been established at Livorno; and the Jews, who are about 15,000 in number, and many of whom are descended from Spanish and Portuguese Jews expelled from the Peninsula two centuries since, have in general adopted the Christian religion, and have largely contributed to the support and extension of the great Synagogue. The population of Leghorn, which is 75,000, among whom are individuals of every nation in Europe, besides Turks, Moors, Armenians, and Jews from Africa and Asia.

Livorno has a claim to classical antiquity; it is first mentioned by Strabo, in the village, parish, and fort, adjacent to Porto Pisano, or the harbour of Pisa, in the eleventh century. It was ravaged in the wars between Genoa and Pisa, was taken possession of by the Visconti of Milan, and afterwards by the French General Bocuclott, who sold it in 1407 to the Genoese, and in 1514 it was granted to the Duke of Savoy, and the town fell at that time into the hands of the Florentines, who not long after effect the purchase of Livorno from the Republic of Genoa, in 1421, for 100,000 golden florins. The Florentines established docks at Livorno, where they built their vessels, and surrounded the place with walls. As the neighbouring Porto Pisano became gradually filled up by the simultaneous effects of the alluvial deposits of the Arno and other streams, and by the sand thrown up by the western storms, the importance of Livorno as a port increased in proportion, until at last it became the chief town of its region. But the great increase of Livorno took place in the following century, under the dynasty of the Medicis. The grand-duke Cosmo I. granted to all new settlers privileges for a period of 100 years, and immunity from pursuit in consequence of debts contracted or penalties incurred in other countries. He also built a mole and light-house, and made it the station of the galleys of the military order of St. Stephen, whose avocation, like that of the order of St. John of Jerusalem, was navigation against the Mussulmans.

His successor Ferdinand I. greatly extended the privileges given by Cosmo, and he published an indulto in forty-eight articles, dated the 10th of June, 1593, by which merchants of all nations and of every religion, Greeks, Armenians, Turks, Jews, Moors, and others, were invited to come and settle at Livorno, without fear of being molested in the exercise of their religion, and with full security for their persons and property. It happened that about this time the fanatical intolerance of the Spaniards was driving away the Jews and Moors from Livorno. The Spanish merchants and others, who had availed themselves of the asylum thus offered to them by Ferdinand, a number of Corsicans, dissatisfied with their Genoese rulers, and of Provencals, scorned away by the civil wars which desolated France, came also to settle at Livorno. The grand-duke Cosmo II. continued the liberal measures of his father, and in 1646 published an indulto, authorizing foreign merchants to build new seaports and towns, and to purchase the town of Porto di Lucca and other places, which had been previously purchased by the city of Livorno. The city of Livorno was thus extended, and its possesions were increased, and the town became the chief centre of the commerce of the Grand-duchy of Tuscany. The grand-duke Ferdinand, whilst all the rest of Europe was at war, favourable to the greatness of Leghorn. When Bonaparte however invaded Italy in 1796, he did not respect the neutrality of Tuscany, but sent a body of troops to seize upon all English, Portuguese, Neapolitan, and Austrian property at Leghorn, and even insisted that the merchants of Leghorn should deliver the balances and deposits which they had in their hands belonging to individuals of other nations. The latter were, however, allowed by the French to remain in their power, with the exception of certain vessels of war, the merchant vessels of the French, and the vessels belonging to Mussulmans.

Upon the restoration of Ferdinand II., the city of Livorno was annihilated, its counting-houses gradually became deserted, a ship seldom entered the harbour, many of the merchants wound up their accounts, and retired to Pisa and other places. Livorno was one of the ports which were included in the first American purchase of the Central American system, and in which the dominion of Napoleon was most disliked. With the peace of 1814 the prosperity of Livorno returned, and it has made rapid strides ever since. Population and buildings have rapidly increased. The immunities of the Porto Franco have been extended to the whole of the new town, which has been constructed, and other improvements have been effected. A railroad is now in progress between Livorno and Florence. A capital of thirty millions of Tuscan livres (one million sterling) has been raised by shares of 1600 per cent, for this purpose. The length of the road will be about 50 miles.

The imports into Livorno are either for consumption or for deposit. In the first place, Livorno supplies with foreign goods Tuscany, Lucca, part of the Roman States, and partly with French goods. The foreign merchants supply Lombardy also, but Trieste has now supplanted Livorno in this branch of trade. The deposit trade of Livorno was also in the last century more extensive than it is now. The English, Dutch, American, and other ships from the Atlantic carried thither manufactures and colonial goods, and exchanged them for cotton, silk, and other produce of the Levant, which were brought to Livorno by Italian and
Greek vessels. The facilities afforded by the lazaretto
and warehouses, the perfect freedom of trade, and the securi-
ty thereby gave, made Livorno a most convenient place of
exchange between the Levant and the nations of western
Europe. This relation of things is now materially altered.
Commerce is become more direct: the English, Americans,
and others, have obtained direct trade with the Levant and
the Black Sea to exchange their cargoes, and for the im-
portation of other products, such as timbers to the Levant
and the Black Sea to exchange their cargoes, and the
importations have taken place in Turkey of late years,
and the security afforded to navigation by the state of
general peace, all tend to favour the direct intercourse be-
tween the two countries. What has been gained by the
removal of the usual coasts, and by the establishment of
a more liberal system of credit, is very great. And, in
addition, these advantages have all been attended by the
importation of a large number of goods from the Levant
and the Black Sea, and the exportation of English pro-
duce from those seas. The Several articles imported are:

The principal articles of produce of the country exported
from Livorno are: silk, either in thread or manufactured,
to the amount of about three millions of francs annually;
wool, two millions; straw hats, three or four millions; for-
mur, iron from Elba, paper, potash, alabaster, coarse woolen
cloths for the Levant, coral gathered on the coast of Bar-
bery and Sardinia, and manufactured at Livorno; and an-
chovies, which are fished off the island of Ischia, oppo-
site the coast of Malaga, Spain. The articles exported are:
corn from the Black Sea, English woolens, English cotton
goods, hardware, salt fish, and colonial articles. In 1832 the imports amounted
to sixty-eight millions of francs, and the exports about fifty
millions. In the same year there entered the port of Livorno
125 English vessels, 726 Austrian chiefly from the
Black Sea, 61 American, 30 Swedish, 9 Danish, 4 Dutch,
61 Greek, besides more than 2000 coasting vessels from the
coasts of Italy, France, and Spain.

(Livres, Canine the general Levant, of especially houses
Still cloths millions.

There chat in the way of General

There are millions.

Tensors. Canine the

The former won. 3d. sterling, the latter worth only two-thirds
of the lire of Modena.

The Lira Italiana is the Italian livre; equal to the Franc in
value, and in the proportions in which it is coined. The
lira of Modena, like the lira of Reggio, has the ancient
French system of coins. (Kelly, vol. i. p. 59; ii. 293.)

LIXYVIUM, a term which is synonymous with ley. It
was used by the older chemists to signify a solution of
an alkaline saline, or a solution of an alkali or alkaline
lixivium.

LIZARD. [Lacertidae; Saurians.]
LIZARD POINT. [Cornwall.]
LJUNGAN-ELF. [Angermanland.]
LJUNNAN-ELF. [Scandinavia.]
LLAMA (Auchenia of Illiger; Lama of Cuvier and others),
the generic name for that form of the Camelidae
which is confined to the New World.

Organisation.

Dentition—Inisors 2, Canine 1, Molars 5–4 = 30.

The difference between the dentition of the two sub-
1 2 3
families of Camelidae, Camelus and Auchenia, appears
to consist mainly in the absence of the two small pointed
or conical incisors in the cansines of the llama, and the molaris in the Camelus,
from the jaws of the Llamas. Thus the Llamas have four false molars, as they
may be termed, less than the Camelis. In other respects the dentition of the one is, as nearly as may be, the
dentition of the other. The following cut exhibits the dental
arrangement of the Dromedary, and will convey a suffi-
ciently accurate idea of the same parts in the Llamas, if the
speculator will suppose the absence of the four teeth above
mentioned. The difference was considered by M. F. Cuvier
to be of such small importance, that he has not considered
it necessary to give a figure of the dentition of Auchenia.

Baron Cuvier observes, that the Camels and Llamas differ
in many points from the bovidæ ruminants. Considered
as a whole, the head of the former presents a narrower
and more elevated muzzle (or museau plus en avant), a cran-
ium larger in proportion, orbits placed more forward, and
the edges of those orbits more prominent, in consequence
of the temples being more sunk.

In the Llamas the bones of the nose are short, and their
extremity notched; their base is slightly enlarged; the
narial bone is but little advanced upon the cheek, and
leaves a wide space between its anterior angle and the
upper external angle of the nasal bone. It does not cover
the orbit and the maxillary bone, but stops above the
suborbital internal hole; nothing of the vomer is to be
seen above the sphen-palatine hole, and a small portion of
the pterygoid internal apophysis scarcely shows itself there.
The partial bones are soon united into a single bone much
thick, which is found in the posterior extremity of which remains
nevertheless, before the opicetal crease. The temporal
wing of the posterior sphenoid bone has a descending pro-
minence, and its pterygoid wing terminates in a sharp
point, which projects more than that of the pterygoid apa...
The tympanic bones are compressed, but project very much: the occipital crest is well marked.

The true Camels, according to the same author, have the occipital crest still more marked and the temple more convex. This is the case in the Camels, and, almost as the Carnassiers. The occipito-temporal suture is very much in front of this crest. The bones of the nose are of much less width at their bases, and there is a great space between the small membranous portion which encloses this peculiar part of the face, and the extremely small on the cheek; it does not reach in the orbit even to the edge of the suborbital internal hole. There is, as in the Llama, a small membranous space between the lacrymal, frontal, and palatine bones, which can be detached. The wing of the vomer shows a small portion above the analogous hole of the sphenopalatine bones. The internal pterygoid apophysis does not exist except towards the point of the wing: it does not rise till it reaches the body of the sphenoid bone, and passes under the wing of that bone and the wing of the palatine bone.

In all other respects, as regards the head, the Camels and Llamas offer a singular resemblance. The sockets of the incisors are smaller than in other ruminants, and the palate of the carpus terminates in the palate by more numerous holes. The oval hole is smaller.

Internally the floor (plancher) of the cerebral cavity is much more limited than it is in the Deer and the Sheep; the diencephal posterior apophysis is of large extent, and the point of the optic nerves is lodged on a level with that of the pituitary gland.

The anterior teeth of the Camels exhibit a considerable difference from those of the other ruminants: they have, in the first place, both above and below, the first molar, or rather false molar, detached from the others, and situated towards, as we have seen above; and which, from its isolated position and pointed form, puts on the appearance of a canine tooth. They have moreover a true canine tooth implanted at the anterior border of the maxillary bone. This tooth becomes in aged subjects developed like the canine of one of the great Carnassiers. Lastly they have a true upper incisive tooth implanted in the intermaxillary bone, and this also puts on the form of a canine tooth: it is, in fact, the incisor of the eldest of the three canines on each side. In the lower jaw they have only the eight ordinary incisors; but besides that the detached molar performs the office of a canine tooth, the external incisor has a pointed form, and rises to interlock (s'engrener) with the premolar and the molar, or at least I must think that it falls very early; but the upper canine and incisor, and the external incisor below, are disposed as in the Camels, and are only more compressed and trenchant at their edges. In both these subgenera there is no space between the wing of that bone and the wing of the palatine bone.

The metatarsal and metacarpal bones of the Camels and Llamas are easily recognised, because they are divided higher in the other ruminants and well above the ankle. The bones of the first are less ample and cuboid bones of the tarsus are not soldered, and always remain distinct. The two edges of the rotary pulley (pouille rotulienne) of the femur are in the Camels nearly equal, as in the Hog. In the ruminants generally the ulna is certainly much shorter, and its bone is almost as long and cuboid as in the other species. No. 554 of the Royal Collection of Drawings of the Museum of the Royal College of Surgeons, prepared by Professor Owen, and, as this part of the subject is peculiarly interesting, we proceed to give a description from the plan of that gentleman of the preparations there made. The ulna of the Goat (No. 554), the psalterium is less distinctly separated from the abomasus, and at this early period of existence it exhibits in the Llama a similar deficiency of the characteristic lamina. The reticulum however is much more complex, each of the larger gives to the being developed into many smaller ones, a structure partially indicated in the reticulum of the Goat (No. 554), and more strongly marked in that of the Ox (No. 464 A). There are moreover two groups of cells developed from the rumen, which differ from those of the reticulum in being smaller, and being

Professor Owen has detected an osteological character, not

noted by Cuvier, which peculiarly marks the Camellidae, viz. the absence of the perforations in the transverse processes of the cervical vertebrae for the transmission of the vertebral arteries.

In the structure of the stomach, the Camellidae exhibit a marked difference from other ruminants. This part of the organization in the true Camels is explained in the article Camel; and though doubts have been thrown on the fact, the stomach of the Llama is formed upon the same peculiar plan which marks the development of this viscus in the Camel. Sir Everard Home maintains that, though a portion of the stomach of the Llama is, as it were, intended to resemble the reservoirs for water in the Camel, these have no depth, are only superficial cells, and beneath the mucous membrane the parts of the mouths and allow the solid food to pass into the fourth cavity, or truly digesting stomach, without going into these cells. Dr. Knox, on the contrary, has shown that the real differences between the stomachs of the Llama and Camel are less than had been imagined in the former. If in making observations on parts of this description, a great deal depends upon the care taken to keep the body of the subject in a fixed position. Thus we find Mr. Spooner, on one occasion of his reading his notes on the post mortem examination of a Camel, that he fixed the subject upon the table of the Zoological Society, observing that though he found nothing to add to the accounts already given by Daubenton and Sir E. Home, the cells of the first cavity in the subject were in the state of the Llama, and he was therefore induced to suppose that the Home was incorrect. As to the correctness of the generally received opinion, that these sacs are destined to act as reservoirs for fluids.

Upon this, Mr. Owen stated that he also had found in the cells of the stomach of Llama which had digested more or less of food; but he suggested the probability that this might have been forced on him by moving the animal about after death, when, muscular power being abolished, resistance to the admission of the food into the cells would have ceased. He added, that in the case of the Camel which was killed some years since at the Royal College of Surgeons (the particulars of the examination of which have been published by Sir E. Home), the cells of the second and first cavities of the stomach were found to be filled with water, and the esophagus was also filled with water. As soon as the animal was kept without drink for three days, when allowed to drink freely, it was killed three hours afterwards, and was opened without being moved from its erect position. Mr. Cox, on the same occasion, suggested that the existence of the cells of the stomach in the Llama would be accounted for by the fact that the animal in question had been kept for many years in this country, where they were at all times provided with water: under these circumstances a receptacle for the preservation of fluid would be a most useful appendage; and the muscle would cease to be applied to that purpose, the muscular power of their apertures would have been consequently diminished. Colonel Sykes added, that on examining, in India, the stomach of a Camel, he had found the cells devoid of food, which is shown in the figure No. 464 B of Professor Owen's book. The Camel killed at the College of Surgeons had been a long time in England; but the function of the water-cells was not altered, as the experiment clearly proved.

The student, if he be disposed to doubt at all, will have his doubts on this also cleared up by the examination of the parts in the Museum of the Royal College of Surgeons, prepared by Professor Owen; and, as this part of the subject is peculiarly interesting, we proceed to give a description from the plan of that gentleman of the preparations there made. In the Camellidae (Camelidte, viz. that genus which comprises the Camels, Llamas, and Glamas) the tuberosities of the upper head of the humerus are not elevated as in the other ruminants. With regard to the pelvis, the Camel has the external angle of the ischial pointed and without truncation, and the spinal region so broad that the ilium of the lesser and more advanced than the other. The posterior front of the pelvis is enlarged, and its posterior border much more like that of the horse; and so it is in the Llama. (Observations Post.)
visible from without, giving a succedaneous character to those parts of the paunch. The several compartments of the stomach have been laid open in this preparation to show their communications with each other and the character of their inner surface. The rumen is lined with cuticle, but is wholly riddled with muscular fibres, which, commencing on the left side of the cardiae orifice, traverses the paunch longitudinally. On the right side of this muscle-patch take off at right angles, and these ridges are connected by still smaller fasciculi, running transversely between them at different distances from each other; the quadrangular spaces which result from the above arrangement of the musculature are protected by a layer of the lining membrane, leaving a circular aperture in the centre of each square for the passage of liquids into the cells beneath. The compartment of the paunch to the left of the great longitudinal ridge terminates in two sacculi, at what may be considered the cardia. These sacculi are simple, one farthest from it is developed into a series of cells, of a smaller size but of precisely similar construction to those on the opposite side of the paunch—a series of smaller muscular bands which day by day change their position, which separates the two sacculi, and these lesser bands being connected by transverse fasciculi, in the intervals of which are developed the reticulum, or water-bag, is laid open, showing that the cells and cuticle do not form a series of parallel muscular patches, as in the ruminates; but their further subdivision is carried to a greater extent, and their ori- fices are not guarded by membranous productions. The external muscular coat of this cavity is so disposed that its exterior is smooth and uniform, and the cells are separated from each other. The oesophagus is laid open, so as to show the muscular ridge which traverses it longitudinally, and winds round the upper part of the reticulum to terminate at the orifice of the paunch. 'It is obvious,' continues Mr. Owen, 'the position of this formation of the alimentary canal, all communication between the first two cavities and the oesophagus would be cut off, and the remasticated food would be conducted, as in the ruminated, into the third cavity. A slighter degree of contraction would cut off the communication with the passage of the food directly into one of the sacculi or water-bag, which probably takes place when the Camel or Llama drinks. A free communication however subsists between the water-bag and paunch. A porcine's quill is passed through the oblique canal leading to the stomach, which is the orifice to an opening of the small bowel, and is the passage of the alimentary canal distinct from and intervening between the reticulum and paunch; it is not so distinct in the Llama; but on a close inspection, the inner membrane nearest the orifice above mentioned may be seen to be produced into ridges, which are in a reticulated form. A similar structure is more distinctly observable in the Camel, this cavity was considered by Daubenton as the true analogue of the reticulum, and the water-bag as a peculiar super-addulation. The remainder of the stomach in the foetal Llama may be seen to form one elongated continuous cavity, bent upon itself at its lower third without rumen or laminae, the latter being afterwards developed at the cardiac half of this cavity. The pylorus is a small transverse aperture protected by a large oval protuberance. The duodenum is cut off from it. This cavity exhibits a small portion of the stomach of an adult Llama, showing the canal which passes along the upper part of the reticulum, and conducts the ruminated food from the osophagus to the third cavity. The muscular fibres of the greater ridge, forming the upper boundary of this canal, are displayed; some of the fibres wind round the aperture of the third cavity, while others return and pass into the lesser ridge. It is these latter fibres, observes Mr. Owen, which, by a forcible contraction, draw up the orifice of the third cavity to the utmost and to the most anterior commissure between the oesophagus and water-bag. The commencement of the reticulum, analogous to the third or super-numerary cavity in the Camel, is kept distended by a bristle. No. 366 D is a portion of the greater group of cells from the paunch of an adult Llama. The cuticle which lines these cells is turned down, and the subjacent membrane removed, to show the muscular fibres of the larger fasciculi, and also those of the lesser connecting bands, which are distinctly muscular, and evidently calculated to close the orifices of the cells. Mr. Owen further observes that, after death, when these contractile parts have ceased to act, the smaller cavities contained in the paunch, such as grama, may pass into these cells; but their contents being of a light and easily disintegrated tissue, and the cavity of the third or water-bag is of a cylindrical form, the larger cells, second cavity, or true water-bag of the Llama. This cavity, Mr. Owen remarks, is not lined with cuticle, as in the horned ruminants; the other differences are pointed out in the description of the following preparation. The third or water-bag is in each case less connected in the circumference of the cells, and constitute the second or external muscular tunics of this part of the stomach. On the opposite side of the preparation a portion of the external layer of fibres is exhibited. (Catalogue, vol. i.)

Mr. Owen, in his interesting paper 'On the Anatomy of the Nuubian Giraffe,' states that the action of the abdominal paritites in rumination is much stronger in the Camel than in the Oxen, differing from the other ruminants in forming a saclike cavity from the stomach, and one which has not hitherto been noticed, that the Cameline Ruminants differ from the true Ruminants in the mode in which the cud is chewed. In the Camel it is ground alternately in opposite directions from side to side, and in this way the exterior or leat of the jaw is ground against the upper in the same direction, by a rotary motion. The movements may be succeeded from right to left, or from left to right, but they are never alternate throughout the masticatory process, as in the others. The dento-muscular mechanism is, in fact, nothing else than the rotation of the jaws of the Giraffe, while masticating the cud, we have evidence of its affinity to the horned ruminants. (Zool. Trans., vol. ii. Communicated Jan. 18—.)

With regard to external characters, we have, both in the Llama and Camel, a peculiar structure in the form of a small head, and the prolonged movable upper lip, deeply fluted vertically; we miss, in both, the naked muzzle, and find the apertures of the nostrils mere fissures capable of being shut at pleasure. The differences in the dentition are marked and striking. The Camel has two teeth in each side of the incisor, each defended by its own pad or cushion, so as to press the most perfect modification of the parts with a view to firm progression, either in ascent or descent, whilst there...
nothing in the structure calculated to impede great rapidity upon comparatively plain ground.

**NATURAL HISTORY.**

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

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

The Llama soon found its way to Europe; for we find, in the 'Icones Animalium' (Gesner, &c.), a figure of one with a collar round his neck, led by a man, apparently its keeper. This figure is by no means badly executed, and is given as the _Alloconus_ of Scaliger, who speaks of it as an animal 'in terra Gigantum' (Palaestina probably), with the head of a horse, the ears, and the neck of a mule, the body of a camel, and the tail of a horse: 'Quam obrem ex Cameloto et alia compositum _Alloconus_, appellavit.' The figure, it appears, was taken from a print, with the following account: In the year of our Lord 1574, on the 19th of May, this wonderful animal was brought to Middelburg (Middleburg) (Selandiers), having never before been seen by the princes of Germany, nor recorded by Pliny nor other ancient writers. They said it was an Indian Sheep from Piro (perhaps Peru), a region nearly six thousand and miles distant from Antwerp. Then follows the description, from which it may be gathered that the animal was either a brown Llama or a pied one. The neck is stated to have been very white, 'cygneus color candissimus,' and the body rufus, 'rufus aut punicus.'

Johu de Laet (fol., Leyden, 1633) appears to have collected most of the Spanish authorities up to his time. He quotes Garcilasso as saying that the domestic animals of the Peruvians are of two kinds, the greater and the less; with the Peruvians, as a common name, call Llama, that is, cattle or sheep (pecudes); thus the shepherds say Llama m. They call the greater cattle (majuus pecus) _Huacuacu-llama_, on account of its similitude to the wild animal which is named _huacuacu_, and from which it differs in colour. The domestic Llamas (domesticum pecus) are found of various colours, like the horse; but the wild Llama is only of one colour, like chestnut. The greater kind have a great resemblance to a camel, except that they want the hump, and are called _Paco-lama_ and _Pacu-lama_; and this is only fed for its flesh and its wool, which is the best and longest, as it is unequal to the carrying of burdens.

De Laet then turns to Acosta. 'Peru,' says the latter, 'has nothing better or more useful for its inhabitants than our countrymen call Peruvian sheep, but which the Peruvians, in their tongue, name _Llama_; for they bring large profit, and are kept for next to nothing (villosissimo alitum). These cattle furnish the natives with wool for their vestments, shirts, and all sorts of linear clothes, while the wool of the latter is of far greater use as beasts of burden. There is no necessity for shoewing them, guiding them by a rein, or feeding them with oats, for these animals serve their master gratuitously, being content with the wild herbs which they meet with everywhere. There are two kinds (species)—one which is woolly and called _Paco_ by the natives, the other covered with a slight fleece (villos levibus) only, and nearly naked, whence it is more fitted for carrying burdens, called _Guamaco_. They are rather larger than sheep, but less than hogs, with long coarse hair, which they use for mats, and complete the body: the colour is various, for some are white, some black, some brown, and some piebald (versicolors), which they call _Moromori_. Their flesh is good, although rather gross (spissior), but that of the llamas is much the best and the most delicate; but they are rarely killed, because they are of far greater use as beasts of burden, and their wool serves for making cloth. This wool the barbarians clean, spin, and weave into garments; but it is of two sorts, one coarser and more common, which they call _Huacuacu_, the other finer and more esteemed, which they call _Cumbi_ (according to Garcilasso, _Compi_): from this last they weave various curtains and hangings (aula et postromata) of most elegant workmanship, which last a long time, and in splendour do not yield to silk; nay, what is wonderful for barbarians, they wear them in their hair. The elegance is nearly equal throughout, nor is the web or woof ever apparent. The ancient Peruvian monarchs kept up many works for weaving _Cumbi_, the principal artificers in which lived at Capachica, on the banks of the lake Titicaca. These wool they dyed with the juice of various herbs,
according as the nature of the work required. But most of the Peruvian barbarians are cunning in this weaving, and have in their huts instruments adapted for the art; and from these we may draw much of the skill necessary for human life. By far the greatest use of these animals however is in carrying burdens; for sometimes 300, sometimes a drove of 1000, carry various articles of merchandize, skins of wine, chocolate (cocoa), maize, Chunnus, and quicksilver to Potosi and the other mines, being conveyed by a few barbarians only, who direct them, and load and unload their burdens, and hardly attended by one or two Spaniards, passing the night in the open air and without a guard,—and that so safely that a bar is in general given to the Spaniards that such is the safety of travel in Peru. The 'burton of each beast,' continues Acosta, 'amounts to 100 and sometimes 150 lbs., which they carry three, or at the most four, leagues a-day, according to the length of the journey. But their leaders know their stations, where food and water for their cattle abound; hence they pitch their tents, and unload their beasts. When however they have only one day's journey to make, the Llamas are able to bear a load of even 200 lbs., or to move forward as many as eight or ten leagues. These animals run with the Spaniards, and are not easily frightened, therefore they are propagated immensely in the mountains, whilst they fail in the plains, on account of the too great heat. The bale sheep (calvum pecos), or Guanaco, are of a fawning (vernie) and gentle aspect: often, as they walk they assume, without regard whatever, an expression of fear or pleasure, so attentively with erected neck, that it is difficult to abstain from laughter; sometimes they are so suddenly terrified, that they run off to the mountain precipices with the greatest swiftness, so that it is next to impossible to catch them in the mountain passes. They are sometimes also so enraged sometimes, or are wearied with their burdens, that they lie down with their burdens, and cannot be made to rise either by threats or blows; whence a proverb has arisen, and stubborn or obstinate men are said to be 'Improbus.' For this there is no better remedy than for the conductor to stop and sit down by the animal, until by his blandishments he prevails on the animal to rise spontaneously.'

It further appears that the Llamas are subject to a disease, called by the 'barbarians' caruchen, which is deadly not only to the animal which has taken it, but spreads by contagion among the flock, so that almost the only remedy is immediately to bury the diseased animal. Garcilaso however mentions other remedies: the most powerful is stated to be a prescription of maize, which is boiled in water, and sprinkled with hard (adipsa suilla.) The price of a Llama varies in different provinces; but the 'barbarian' who possesses two or three is considered sufficiently rich. Garcilaso adds that, 'The most pleasant and very agreeable thing about the animal is, that they do not milk their flocks, which give that secretion very sparingly, and only in sufficient quantity for their young; neither did they make cheeses of their milk.'

De Laet then proceeds to state, that besides these domestic herds, Peru produces wild animals which are rarely to be seen in other parts of the New World, except in the neighbouring country of Chili. Some of these are called Guanaco or Huannaco, from a similitude to which the domestic kinds obtained the same name. The flesh of these is good according to Garcilaso, and is called the same as that of the domestic Huannaco Llamas. The males keep a look-out on the highest hills, whilst the females are feeding in the valleys: and when the former observe the approach of men from afar, they neigh almost like a horse, to warn the females that the men come nearer, they fly, driving the females before them. The wool of these is short and rough, but it is notwithstanding used by the 'barbarians' for making cloth. These animals are taken in snares and nooses. Others again are called Vicuñas; these are not very unlike goats, except that they have no horns, and are larger, and are of a lemonine colour or more ruddy; these live in the highest mountains and groves, and love the colder regions, but especially the solitudes which the Peruvians designate by the common name of Pumas; neither are they annoyed by snow or frost, but are rather recreated thereby. They go in flocks, and run most swiftly. Such is their timidity, that at the sight of men or wild beasts they hurry instantly into inaccessible or hidden fastnesses. There were occasional instances recorded of men describing, that they would never have known these reclusive animals were now become much more rare on account of the numerous licence in hunting. Their wool is very fine, and like silk, or rather like the wool of the Beaver, and the natives deservedly estimate it highly; for besides other properties, it is mostly used for the manufacturing of clothes, but also in many other useful purposes. It is especially used for caps. Next to these come the Tarugas or Tarucos, which are larger and more swift than the Vicuñas, and of a more burnt colour, with pendulous and light ears: they rarely collect in herds, and generally prefer the pastures of the mountains; but that these are a species of deer, but less than those of Europe. They were innumerable in the time of the Ycasas, so that they entered the very towns; nor was there any deficiency of their fawns and does. Thus far De Laet, who says that these animals are, 'as in all America, a species of a kind like the Paces and Guanacoare; the smallest and lowest in estimation, whilst those from the Vicuñas are rather larger and better, and those of the Tarugas the best of all.'

We now turn to Hernandez. We find in the Roman edition (fol. 1631) a figure of the Llama or Vicuña, Ovis Peruviana,' with a description. Both figure and description leave no doubt that the brown Llama is the animal represented. There is a very long commentary, well worth the attention of the curious reader. Of this 'Arrestus peruvius,' he says, 'The species is the same as the Llama, but it is a domestic animal, only, like the animal represented; the other small and stunted (parve et pygmea), with short legs, but strong and able to carry domestic burdens, such as water, corn, &c. Another kind, the Paces, are stated not to be so corpulent. In the Encyclopaedia Britannica, the Peruvian herbman the Pronom Ichatt Ovita, is called Perusscatt.

Margrave gives a figure of the long-wooled and larger Llama, under the name of Otocamcamus. In some parts it is not bad; in others, the mazuc and forefoot for instance. But as they are sure to be a beast of burden, the Spaniards consider it as called Paco. His description is worth consulting; and he says, among other statements, that they bore the ears of these 'sheep,' and run ropes through them, by which their masters manage them and lead them where they please. He then gives another figure, much better and it is the other, of a second species, which is nearly naked in regard to fleece, and is only covered by a light and short one (calvum pecus of De Laet); and says that it partly resembles a camel and partly a deer, so that it might be well called in Greek, Elapho-camalus or Elaphocamalus.

We gather then from these and other early writers, that there were three kinds of these animals, Guanaco or Huannaco, Paces, and Vicuñas, the term Llama being applicable to each of them, and merely signifying cattle or sheep. The two latter are affected by the same disease that during the last half century,' says Mr. Bennett, 'the great majority of naturalists, including Ray, Klein, Briasson, and Linnaeus, concurred in reducing them to two species, the Llama or Guanaco, and the second to a breed of burthen, and the third, the Paces or Vicuñas, cultivated for the fleece and hair. Of this opinion was Buffon when he wrote the history of the Llama and the Paces; but the observation of living specimens of the Llama and the Vicuña, and the communications of the Abbe Budard, and the subject, induced him afterwards to admit the latter animal as a species distinct from the preceding. In this he was followed by Molina, who, in his 'Natural History of Chili,' separated also the Guanaco, and added a fifth species, the Huecor. The Chilian sheep which we shall speak of as that of the domestic Huannaco Llamas is said to be a species of jungle-size in the camps, and almost every subsequent compiler, have adopted these five species without examination, giving them such synonyms as they could pick up almost indiscriminately from the writers on the natural history of America, and thus reducing it into a chaos, which it would be better, and useless to attempt to unravel.' (Gardens and Memo-}
Huanaca, Hamilt. Smith; Cerovacaelus of Jonston) with a query if it is not a mere variety of L. Peruana. As a synonym to Lama Paco he adds Auchenia Paco (Hamilt. Smith, Canelus Guanaco (Traill). To Auchenia Tecnica (Hamilt. Smith), less than the former; and to Lama Arucuna, Auchenia Aeuicana (Hamilt. Smith).

Mr. Bennett observes that it seems to be the general opinion among the leading writers of the present day that the subdivision of the genus has been carried to too great an extent. He thinks M. F. Cuvier is fully justified by the imperfect accounts of Molina in rejecting as species the Guanaco and the Huerque of that writer. Mr. Bennett states that he should have little hesitation in proceeding still further, for he is strongly inclined to agree with Baron Cuvier in regarding the Paco as a mere variety of the Llama with the wool more amply developed; and in considering the Vicuña as the only animal of the group that deserves to be specifically distinguished from the latter. Skeletons of both the Llama and Vicuña are preserved in the Museum of the College of Surgeons, London.

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

Habits. Food. Reproduction, &c. — The habits of the Llamas may be in great measure gathered from the descriptions of the Spanish writers above given. In a wild state they keep together in herds, sometimes of one or two hundred, feeding on a sort of rushy grass or reed called echo, which grows on the mountains, and, it is said, never drinking when they have sufficient green borage. They resort to a particular spot to drop their dung, which a good deal resembles that of a goat, sheep, or giraffe, a habit which is fatal to them from betraying their haunts. Modern observers have noticed the careful look-out that they keep, and the rapidity with which they flee, then turn to gaze, and again swiftly gallop off. Molina says that the Guanacoes love the mountains, where they passed the summer, at the beginning of winter, when they descend to the plains. Here they are hunted down, at least the young and inactive, with dogs by the Chilians. During the chase they are said frequently to turn upon their pursuers, neigh loudly, and then take to their heels again. Another mode of capturing them by the Llamas is for many hunters to join and drive them into a narrow pass, across which cords have been drawn about four feet from the ground, with bits of cloth or wool tied to them at small distances, somewhat in the way adopted by gardeners to keep small birds from the seeds. This apparatus with its pendent trumpery frightens the animals, and they get together, when the hunters kill them with stones tied to the end of leathern thongs. If there are any Guanacoes among them, they leap the cords and are followed by the Vicuña. Those that we have seen in captivity have been tolerably mild and tame, but very capricious, accepting biscuits and such delicacies from visitors, but ejecting a copious shower of saliva in their faces at the least real or fancied affront. This shower, though sufficiently unpleasant, has not, as far as our experience goes, the scald and blistering properties ascribed to it by some authors. Genitale masculum tenue est, etc. recurvum. Est autem luxuriosis ulva, et turpis in exercendo venereos actus, quam ulium mundi animal. Femiae enim vulvam habet neminem quam in terra jacent lata se compositum, ut illi superfrereque, qui tunc tempora geminis species maximi vocatur, nec aliud tune quasi fit, quam quod ad ipsum alterur consupsit, et non raro die intregum consummantis, ait ante quem ipsum venereos incipit et albae. Ab illo, ut est superflere, qui tinctum a coloribus geminis specie maximi vocatur, nec aliud tune quasi fit, quam quod ad ipsum alterur consupsit, et non raro die intregum consummantis, ait ante quem ipsum venereos incipit et albae. Ab illo, ut est superflere, qui tinctum a coloribus geminis

Male Brown Llama. (F. Cuvier.)

The necessity to state that they were fed during the journey with potatoes, maize, and hay; as soon however as the potatoes were exhausted, consumption seems on so obstinately that medical relief was required. They were shipped as a precaution, and even then they were only their weight of which was in Cudda in 1808, just as Godoy fell into disgrace. Here they were fed. The rest were near being thrown into the sea by the perfidious rabble, in their detestation of the late minister and minor. The poor Llamas were however saved from the tender mercies of the populace by the governor of Cudda, and were consigned to Don Francisco de Tuiran of Andalucia, who had a fine menagerie at San Lucar de Barrameda. When the French occupied the province, Marques South accepted them, and M. Bory St. Vincent, who was with the army, studied their habits and examined drawings of them, which were lost at the battle of Vitoria. M. Bory paid great attention to their wool, and some from each of the kinds was sent to the Academy of Sciences at Paris. From the report of the French naturalist and philosophical Spaniard, it would appear that the fleece of the Alpe-Vigones (produced by a cross between a Vigone and an Alpaca) has much greater length than that of any other variety and is six times heavier.

One of the Monographies, vol. t, published by the Society for the Diffusion of Useful Knowledge, where much interesting information is collected.

P. C. No. 860
look in vain for those progressive developments of civilization, these moments of repose, these resting-places in the life of a people. ... Those species of ruminating animals which constitute the riches of the people of the Old World are wanting in the New. The bison and the musk ox have not yet been reduced to the domestic state; the enormous multiplication of the Llama and the Guanaco have not produced in the natives the habits of the pastoral life. These multitudes are already lessened, and the form itself will probably ere long be extinct. Civilization has brought with it the animals of the Old Continent. The horse and the mule have almost entirely superseded the Llamas as beasts of burden, and the sheep and the goat, in great measure, as contributors to the food and raiment of man.

Vicuna. (Dufﬁn.)


The white Llama, according to Feuillede, is said to have been the presiding deity of the nates of Callao, before that province was annexed to the empire of the Yncas.

Arrangement.

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

Linnaeus places the genus Camelus at the head of his

White Llama, exhibited in England.

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

Pennant also arranges the Llamas and Pacos, &c., under his genus Camel, which is placed between the Musk and the Hog.

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

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

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

M. Lesson arranges the Llamas as the third genus of the Camelidae, the two first being Camelus and Mercocotherium. This third and last genus is immediately succeeded by the Moschidae.

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

Mr. Swainson (1835) makes the 'Soltipes, single-footed quadrupeds,' his fifth tribe of Ungulata, consist of the genera Camelus, Auchenia, and Equus.

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

Fam. 1. Camelidae.

Fem. subbisculate, callous beneath, toes distinct at the tip from the sole; no spurious hoofs, no horns; incisor teeth, two above, six below.

2. Genera.

1. Camelus, whose characters are—

Toes conjoined, immovable.

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

Lachrymal Sinuses, none.

Interdigital Pits, none.

Ingual Follicles, none.

Teats, four.

2. Auchenia.

Toes disjoined, moveable.

Muzzle furnished with a chiloma, the upper lip divided.

Lachrymal Sinuses, none.

Interdigital Pits, none.

Ingual Follicles, none.

Teats, two.

Mr. Ogilby goes on to state that the Camelidae form what Mr. MacLeay would call an aberrant group; they

* Tumid upper lip contempora with the nose or nostril.
differ essentially, observes the former, from other Rumia-
nants in the structure both of the organs of locomotion and of
mastication, and their generic distinctions consequently
depend upon characters which have no application to the re-
maining groups of the order. On the other hand, the prin-
ciples of generic distribution which subsist among the rest of
the Ruminants appear, in Mr. Ogilvy's opinion, to furnish
arguable characters only when applied to the Camelidae;
but Mr. Darwin has brought home to South America the
remains of certain animals which have no application to the
remaining groups of the order. The Camelidae, in Mr. Ogilvy's arrange-
ment, are immediately followed by the Cervidae. (Zool. Proc.
1836.)

** No fossil species of Auchenia has yet been discovered;
but Mr. Darwin brought home from South America the
remains of certain animals which have no application to the
remaining groups of the order. The Camelidae, in Mr. Ogilvy's arrange-
ment, are immediately followed by the Cervidae. (Zool. Proc.
1836.)
LOBARIA. [Bullard, vol. vi., p. 11.]

LOBESIA VASCO. [Adonis de Gual.]  
LOBEL, or LOBEL, MATTHEW, one of the founders of the science of systematic botany, was born in Flanders, in the year 1585, travelled extensively in the interior of south of Europe, and finally settled in England, where he became physician to James I. He is chiefly known now as the author of botanical works illustrated by great numbers of figures, of which there are about 200 in his Plan-tae, published at Antwerp, in 1576, and still referred to by critical writers on systematic botany. But his name deserves mention more particularly as that of the first naturalist who devised the present method of arranging plants in a natural order, proceeding on what is now called the binominal, or modern, or more strictly the distinctness. In his Stirpium nova adversaria, published in London, in 1576, and dedicated to Queen Elizabeth, he expressly mentions Gramineae, Acorn, under which Irideaceae and Zingiberaceae are included, Asphodelaceae, Brassicaceae, Cruciferae, Glauces, Papaveraceae, Lamiaceae, Apocynaceae, Leguminosae, and some others. Lobelia was dedicated to him by Linnaeus.

LOBELIA INFLATA, or Indian tobacco, an annual plant, growing in most districts of North America, of which the oral obtuse leaves are used in medicine. They have an undulated and irregular-toothed margin, rough surface, and slightly planed below, possessing a taste which greatly differs from that of common tobacco. The inflated capsules possess the same virtues.

The action on the human system is nearly the same as that of tobacco when chewed, producing a copious flow of saliva, and if swallowed in considerable dose causing great indigestion. It is collected from the fruits and seeds of the plant, internodally. To the Arabs and the peoples of the East, it is used by the common people, who make a decoction of the leaves and roots, and drink it in much the same manner as tobacco. They also use it in the form of an oral inhalant, and inhale it as smoke along with aromatic herbs. It has been found beneficial as an expectorant and relaxant in hooping-cough, though in botany it does not prove more than a pal-iative, or afford more than temporary relief; as such however it is very serviceable in some nervous affections with irregular action of the heart.

LOBELIAE, an important natural order of mon-ocotyledonedous flowers from Campanulaceae in having irregular flowers and symmetrical stems, but otherwise resembling them very nearly; of these two characters the last is the most absolute, Isotoma, a lobelaceous genus, being only the most aberrant. The principal genus lobelias, principally inhabit the warmer parts of the world; in Europe they are rare, in North America much more common, espe-cially in the southern states, and they are abundant in the hotter countries of South America. Many are found at the Cape of Good Hope, and in the north of India; their favourite haunts being damp woods or situations freely supplied with moisture. They abound in a milky juice, which in all is acrid, and in some so intensely so as to produce dangerous or even fatal consequences when applied to the surface of the body or taken internally. Among the most virulent is the Hippobroma longiflora, a West Indian species, and the Lobelia Tupas, a Chilian plant now common in gardens. Nevertheless certain species have proved, in skilful hands, valuable curative agents, especially the Lobelia littoralis, and some others of the family. Of this order are cultivated in gardens for the sake of their brilliant blue or scarlet flowers: white and yellow are rare in the order.

LOBIFER, Cuvier's name for a genus of Wading Birds (considered as a family) a form of which is Tringa hybridea, Linn. The genus is identical with Phaleropus of Vieillot.

LOBO, JEROME, a native of Lisbon, entered the order of the Jesuits, and became professor in their college at Coimbra, whence he was ordered to the missions in India. He arrived at Goa in 1622, and after remaining there about a twelvemonth he volunteered for the mission to Abyssinia. The sovereign of that country, whom Lobo calls Salam Segued, had turned Catholic through the instrumentality of Father Pas, who had gone to Abyssinia in 1603. The connexion between Abyssinia and Portugal had begun nearly a century before, when the Negus, or emperor David, having asked the assistance of the Portuguese against the Moors of Adel, Don Christopher de Gama, one of the sons of the discoverer Vasco de Gama, was sent from India with 400 men to Abyssinia. [Alvarez, Fran-cisco.]

Lobo sailed from Goa in 1624, and landed at Paté, on the coast of Mombassa, thinking of reaching Abyssinia by land. The empire existed in his time as a set of scattered settlements, where the chief of the land was the Negus Peror's empire, but this is now reduced to Abyssinia, and those of the south that was formerly a province of his. This route was considered by the Portuguese in India as preferable to that by the Red Sea, the coasts of which were in the hands of the Turks. Lobo made an effort to pass from Paté to the northward among the Gallas, of whom he gave the following description, putting it impracticable to penetrate into Abyssinia by that way, he retraced his steps to the coast and embarked for India.

The following year (1625) he sailed again with Mendes, the newly appointed patriarch of Ethiopia, and other missionaries. This time they sailed up the Red Sea and landed at Belur, or Belal Bay, 13° 14' N. lat., on the Dancali coast, whose shore was tributary to Abyssinia, and thence crossing the salt plain he entered Tigre by a mountain-pass and arrived at Fremona near Duna, where the missionary settlement was. Here Lobo remained the re-mainder of that year, after which the patriarch proceeded to the emperor's court, but Lobo remained in Tigre, where he spent several months investigating the chemical substances of that kingdom. A revolt of the viceroy of Tigre, Tecla Georgis, put Lobo in great danger, for the rebels were joined by the Abyssinian priests, who hated the Catholic missionaries, and indeed represented the protection given by the Portuguese as a foreign and convicted by the complaints against him. The viceroy however was defeated, arrested and hanged, and Lobo, having repaired to the emperor's court, was afterwards sent by his superiors to the kingdom of Damot. He here introduces in his narrative a new account of the Damot Empire and its civil customs; from what he had himself seen, and partly from what he had heard from the natives.' His account coincides in the main with the subsequent observations of Bruce and others. From Damot Lobo after some time returned again to Tigre, where the persecution raised by the son and successor of Seguedovertook him. All the Portuguese, to the number of 400, with the patriarch, a bishop, and eighteen Jesuits, were compelled to leave the country in 1634. They put themselves under the protection of the Bahmrahs, by whom however they were treated with great cruelty and wail, who demanded a ransom. Lobo was sent to India for the purpose, and he endeavoured strongly to persuade the Portuguese viceroy to send a squadron with troops to take possession of Mogadish, in which he had some confidence, and perhaps the means to follow his advice, and referred him to Lisbon. Lobo sailed for Europe, but, as he himself says, at the end of his narrative, ' there had not any man a voyage so troublesome as mine, or interrupted by such a variety of unhappy accidents and dangers,' he arrived on the coast of Natal, was taken by the Hollander, and it is not easy to mention the dangers which I was exposed to both by land and sea before I arrived in Portugal.' Portugal was then under the king of Spain, and Lobo was sent to Madrid, where he found it still more indifferent with regard to Abyssinian affairs than he had experienced at Goa. Still engrossed by his favourite idea, that of reclaiming Abyssinia to the Catholic faith by means of Portuguese influence and arms, Lobo set off for Rome, but there also he found little encouragement, and in 1640 returned to India, and became rector and afterwards provincial of the Jesuits at Goa. In 1656 he returned to Lisbon; and in 1659 he published the narrative of his journey to Abyssinia, under the title of History of Mission in Abyssinia, which including the life of the Abbé Legrand, who added a continuation of the history of the Catholic missions in Abyssinia after Lobo's departure, and also an account of the expedition of Focet, a French surgeon, who reached that country from the Syrian coast, and a sub-sequent attempt made by Dr. Ricolle, who bore a sort of diplomatic character from the French court, but was mur-dered on his way, at Sennara, in 1705. This is followed by several dissertations on the history, religion, government, &c., of Abyssinia. The whole was translated into English by Dr. Johnson in 1732. There had already appeared in
1675 a little work published by the Royal Society of London, said to be translated from a Portuguese MS., styled 'A Short Relation of the River Nile,' which is also found in Thévenot's collection, and the original of which is Lobo's. Many of the particulars coincide with those in the larger narrative. Lobo died at Lisbon in 1678. He was a man of abilities, enterprise, and perseverance, and altogether well qualified for the mission with which he had undertaken. **Lobo's.**

**LOBOPHYLLIA.** A portion of the animals included in Lamarck's genus Caryophyllus is thus named by Blainville.[1]

**LOBSTERS,**[2] a group of recent zoophytes, separated from the Linnean Alcyonia. [ALCYONEM.]

**LOCARNO.** [TICINO.]

**LOCHABER,** a district of Scotland in the south-west of Inverness-shire, which takes its name from 'Loch a' Bheithe,' a small lake in the vicinity of Fort William, which, according to Cammon, was formerly written 'Loghbuie,' signifying the mouth of the lakes. The north-western boundary of this district is formed by Loch Eil, Loch Lochie, and the Caledonian Canal, while towards the south and south-west it is terminated by the shores of Peribh and Argylle, from which it is partly separated by Loch Leven. The north-eastern boundary is formed by the district of Badenoch; but the natural limits in this direction are not distinctly defined, and moreover the different authorities do not agree in their information. In the map of Inverness-shire published in the 'New Statistical Account of Scotland' the north-eastern boundary is nearly a straight line joining the southern extremity of Loch Ericht and the northern extremity of Loch Lochie, the distance to which the greatest length of the district, from north-west to south-east, does not exceed 32 miles, while its greatest width, between Lochs Lochie and Ericht, is about 20 miles; and as its form, as there given, is nearly triangular, the area must be about 320 square miles. But in the 'Man and Mountain' published by the Society, the 'Diffusion of Useful Knowledge the district appears to extend as far north-east as Loch Spey; whereby its superficial extent is somewhat augmented.

**LOCHES.** [INDRE ET LOIRE.]

**LOCK, MATTHEW,** an English composer of great and deserved celebrity, was born in Exeter, and, as a chorister of the cathedral, was instructed in the elements of music by Walk, the organist. He completed his studies under Edward Gibbons, a brother of the illustrious Orlando. The continuator of Baker's Chronicle tells us that Lock was employed to write the music for the public entry of Charles II.; shortly after which he was appointed composer in ordinary. As soon as his 25th year at the period of the Restoration, the date of which his birth may be fixed at 1635. His first publication was under the title of A Little Consort of Three Parts, for Viols or Violins, consisting of pavans, ayres, sarabands, &c.; the first numbers of which were lent to a lady that catch can be seen, &c., by Lock, and among them that agreeable piece of vocal harmony, Ne'er trouble thyself about Times or their Turnings.

Lock was the first English composer for the stage. He set the instrumental music in the Tempest, as performed in 1673; and in the same year composed the overture, air, &c. to Shadwell's Psyche, which he published two years after, with a preface betraying strong symptoms of that irascible temper which subsequently displayed itself in very glaring form. He composed also a quarter of the music in the Chapel Royal; and next, in his opposition to a plan proposed for a great improvement in musical notation by the Rev. Thomas Salomon, A.M., of Trinity College, Oxford. The abusive and bitter terms in which he expressed himself in this letter were such that a quarter of the chapel chapels remained the music, and Lock, after having there thought to reconcile with each other in the year 1674, published an Essay, &c., which is an answer to Salomon's proposal, and are at once a distinct proof of Lock's uncontrolled violent disposition, and either of his utter incapability of justly estimating a plan which would have promised highly beneficial to the art, or of his selfishness in opposing it, which delay renders more difficult to effect, though ultimately, and at no distant period, the amelioration suggested by the above-named mathematician, or a still more complete decision, will be forced on the professors of music.

Lock contributed much to the musical publications of his day. His sacred compositions, some of which appear in the Harmonia Sacra, and in Boyce's Collection of Cathedral Music, are quaint, though they show that he was a master of harmony. But his Music in Masque is that on which his fame is based, and which will float his name down the stream of time: 'it is,' says his biographer, in The Harmonia, 'a lasting monument of the author's creative power, and of his judgment. If the age in which it was produced, the infante state of dramatic art, and the activities of those whose sordid condition of what was then called an orchestra, be all duly considered, his work will be described, not as "a spark," as Dr. Burney calls it, but as a blaze of genius, the brightness of which will outshine all his predecessors, and which will be a light to the world, and which, could it have been aided by the enlarged means so plentifully afforded in after-times, would now have shone with a splendour that has rarely been equalled in any age or country.

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

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

In 1664, Locke visited Berlin as secretary to Sir W. Swan, envoy to the elector of Brandenburg; but after a year he returned to England, and resided at the house of Lord Ashley, afterwards earl of Shaftesbury. Locke accepted the invitation of this nobleman to reside in his house; and from this time he attached himself to his fortunes during life, and after death vindicated his memory by a crown of laurels. Locke was a pupil of the famous Antoine Arnauld, Comte de Shaftesbury, and at the University of Paris, and in the College of France, where he was considered, a young man, as the most philosophical of his age. His vita, 'Descartes, his life and work,' by the late late P. Haymore, with a portrait of Antoine Arnauld, Comte de Shaftesbury, tirés des Papiers de feu M. Locke, et rédigés par Le Clerc, Biblioth. Charon, t. viii., p. 146. In the house of Shaftesbury Locke became acquainted with some of the most eminent men of the day, and was introduced to the society of Northumberland, whom, in 1668, he accompanied on a tour into France. Upon the death of the earl, he returned to England, where he again found a home in the house of Lord Ashley, who was then chancellor of the exchequer, and Locke was employed to write his memoirs, which were published by the government of Carolina, which province had been granted by Charles II. to Lord Ashley with seven others.

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

In 1673 Locke was admitted to the degree of bachelor in medicine, and in the summer of the same year visited the court of Rome, where he was received with great favour by the pontiff, who at last took up his residence, he formed the acquaintance of the earl of Pembroke, to whom he afterwards dedicated his Essay concerning Human Understanding.
In 1679 Locke was recalled to England by the earl of Shaftesbury, who had been restored to favour and appointed president of the council. Six months afterwards however he was again disgraced, and, after a short imprisonment in the Tower, was ultimately compelled to leave England in 1682, to the great indignation of his friends. He finally indentured his services to the French king, being at the same time appointed tutor to the son of the Marquess de Louvois, a member of the commission of war, and later associated with some of the students of Christ Church. But the reason of the court-party extended its persecution of Locke even into Holland, and in the following year the English government demanded of the States-general the return of Mr. Locke, with eighty-three other exiles, on the charge of participating in the expedition of the duke of Monmouth. Fortunately Locke found friends to conceal him until the court was satisfied of his innocence or the fury of persecution had passed away. During his residence in Holland he became acquainted with Lellerc, Leclerc, and other learned men attached to the cause of free inquiry, both in religion and politics. Having completed his 'Essay concerning Human Understanding' in 1689, he returned to England, after various labours and negotiations. His books were translated into French by Leclerc, who inserted it in one of his Bibliotheques. In that of 1686 he had already published his 'Adversarium Methodus, or a New Method of a Common-place Book,' which was originally written in French, and afterwards translated into English. In reward for his sufferings in the cause of liberty, Locke now obtained, through the interest of Lord Mordaunt, the situation of commissioner of appeals, with a salary of 2000l. a year. In 1690 his reputation as a philosophical writer was established by the work 'Concerning Human Understanding,' which was published in 1689, and 'Paraphrases, with notes, of the Epistles of St. Paul,' together with an 'Essay for the Understanding of St. Paul's Epistles by consulting St. Paul himself,' were published among his posthumous works. These contained contributions to the understanding of the Bible and an 'Examination of Father Malebranche's opinion of Seeing all things in God.' He died on the 28th October, 1704, in the seventy-third year of his age.

The personal character of Locke was in complete harmony with the opinions which he so earnestly and so ably advocated. Truly attached to the cause of liberty, he was also willing to suffer for it. Perfectly disinterested, and without any personal objects at stake in the political controversy, he was the first of his profession to become immersed in the academic studies, and the sincerity of his own profession was the test of what he believed to be the conscientious sentiments of others.

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

A rapid analysis of this Essay is necessary to enable us to form a right estimate of the philosophical merits of Locke. As all human knowledge ultimately reposes, both in lexicography and ethics, on the acquisition of the cognitive faculty, which Locke designates by the term 'understanding,' Locke proposes to determine what objects our understanding is and is not fitted to deal with. With this as the first place in his consideration of and ideas; in the next place, to show the nature of that knowledge which is acquired by those ideas, and its certainty, evidence, and extent; and, lastly, to determine the nature and grounds of assent or opinion.

Before entering upon this investigation Locke gets rid of a supposition which, if once admitted, would render all such inquiry useless. The refutation of the theory of innate ideas and principles of knowledge is the subject-matter of the first book of the Essay. Generally, he observes, the
common assent of men to certain fundamental principles may be explained otherwise than by the supposition of their being innate; and consequently the hypothesis is unnecessary. But, in particular, he denies that there are any such universal and primary principles as are admitted by all men, and known as soon as developed, for to these two heads he reduces all the arguments usually advanced in support of this hypothesis. Thus of speculative principles he takes the principles of contradiction and identity, and shows, by an inductive appeal to savages, infants, and idiots, that they are not universally acknowledged; and as to their being primary, he appeals to the observation of the infant, explaining that they are far from being the first ideas of which the human mind is conscious. The principles of morals are next submitted to a similar examination; and lastly, he shows that no ideas are innate: for instance, he refers to the idea of the existence of a_s substance, which, by a like appeal to savage nations and children, he proves to be neither universal nor primary, and arrives at the conclusion that neither particular ideas nor general principles of knowledge or morals are antecedent to experience.

The only source of human knowledge is experience, which is two-fold, either internal or external, according as it is employed about sensible objects or the operations of our minds. Hence there are two kinds of ideas, ideas of sensation and ideas of reflection. The former may properly be called an internal sense. The latter are subsequent to the former, and are inferior in distinctness to those furnished to the mind through the sensuous impressions of outward objects. Without consciousness it is, according to Locke, that we have an idea; and to be conscious of something is to be conscious of it as the same thing. He accordingly maintains, at great length, against Descartes, that the mind does not always think, and that its essence does not consist in thinking.

The question whether the idea of an object is either simple, and not admittance of further reduction, or complex. The simple rise from the inner or outer sense; and they are in fact the sole materials of all knowledge. For all complex ideas may be resolved into them. The understanding cannot originate any simple idea, or change them, but must passively receive them as they are presented to it. Locke here makes the first attempt to give an analysis of the sensuous faculty, to refer to each of the senses the ideas derived from them separately, or from the combined operation of several. Thus light and colour are derived from vision alone, but extension and figure from the senses of touch and sight. In reference to these ideas with their objects, Locke draws an important distinction between primary and secondary qualities: the former belong really to objects, and are inseparable from them, and are extension, solidity, figure, and motion; the latter, which are colour, smell, sound, and taste, cannot be considered as real qualities of objects, but still, as they are powers in objects themselves to produce various sensations in the mind, their reality must in so far be admitted. Of the operations of the understanding upon its ideas, perception, cognition, and reflection, Locke understands the consciousness or the faculty of perceiving whatever takes place within the mind: it is the inlet of knowledge, while retention is the general process of thinking; and, as the mind cannot be from its nature passive, but has always a power to revive ideas which after being imprinted have disappeared. This is memory, which, as it were, the storehouse of ideas. The ideas thus often refreshed, or repeated, fix themselves most clearly and lastingly in the mind. But in this, as in many other cases, the re-appearance of obliterated pictures or ideas depending on the will. Discerning, by which term he designates the logical activity of the intellect, consists in comparing and condensing certain simple ideas, or in concerning them apart from certain relations of time and place. The called abstraction, by means of which particular ideas are advanced to generals. By composition the mind forms a multitude of complex ideas, which are either modes, substances, or relations.

In Locke it then proceeds to show in detail how certain complex ideas are formed out of simple ones. The idea of space is got by the senses of sight and touch together; certain combinations of relations in space are measures, and the universal admittance because without limits is that which gives the idea of immensity.

Figure is the relation which the parts of the terminations of a circumscribed space have within themselves. He then proceeds to refute the Cartesian doctrine, that body is a system of matter and sensation, and that the primary idea is full, space is empty, and that all bodies easily pass into it; and while the latter is not physically divisible, that is, has not moveable parts, the parts of the former are moveable, and itself is physically divisible. What however space and time are is an undetermined idea of a vacuum beyond the utmost bounds of body, and thus proved by the power of annihilation and the possibility of motion. The idea of successions arises from the perceptions of a continued series of sensations, and by observing the changes of the mind itself, which takes place in the duration of time, which, when determined by a certain measure, suggests that of time; and as we arrive at the idea of immensity by the perception that we can enlarge any given extension without limit, so the unchecked repetitions of the same sensations give us an idea of duration, which is formed partly by a perception that outward objects are produced and destroyed by others, partly by that of the actor of objects on the senses; but chiefly from that of the mind's internal operations. The latter suggests the idea of active motion.--Not the number of passive images, the act of producing the presence or absence of a particular idea, or to produce motion or rest, and liberty is the power to that, or not, to act or not to act, according as appears good to the mind. The will is determined by the understanding, which determines it by a feeling of the uniformity of a present state, which is called desire.

As to the origin of the idea of substance:—we often find certain ideas connected together; and in consequence of the invariable association, we come to be under the influence of a single idea, and as the qualities which originate these ideas have no separate subsistence in themselves, we are driven to suppose the existence of a 'something' as a support of these qualities. To this somewhat we give the name of substance, and the idea of substance is the same as the idea of all things, the idea of the series of that ultimate of things which is the antecedent to all things, and gives the idea of the universe, or the sum of all things.

Of the idea of relation, those of cause and effect are got from the observation that several particulars, both qualities and substances, begin to exist, and receive their existence, from the due application and operation of some other being. Locke, in the same language, speaks of a general idea of the universe, which is derived from experience. When we compare an object with itself at different times and places, and find it to be the same, we arrive at the idea of identity. Whatever has the same beginning in reference to time and place is the same, and a material aggregate which neither decreases nor lessens is the same; but in organisical and living creatures, identity is determined not merely by the duration of the material mass, but by that of the organisical structure and the continuance of consciousness. Lastly, moral good and evil are ideas which are involved in the idea of a will, which occasions pleasure and pain; and moral good and evil are the conformity of human actions to some law whereby the actions are pleasing or evil, which makes us to perceive pleasure and pain. He divides them accordingly into clear and obscure, distinct and confused, into real and fantastical, adequate and inadequate, and lastly, into true and false. In treating of this last distinction, he observes that all ideas are in themselves obscure, and that the just and plain judgment on them is limited by the understanding, and that the confusion and error is owing to the use too frequently made by people of the word idea, which signifies both a thing conceived by the mind, and this use of the word is the cause of the greatest difficulties in philosophy. He divides them accordingly into clear and obscure, distinct and confused, into real and fantastical, adequate and inadequate, and lastly, into true and false. In treating of this last distinction, he observes that all ideas are in themselves obscure, and that the just and plain judgment on them is limited by the understanding, and that the confusion and error is owing to the use too frequently made by people of the word idea, which signifies both a thing conceived by the mind, and this use of the word is the cause of the greatest difficulties in philosophy. He divides them accordingly into clear and obscure, distinct and confused, into real and fantastical, adequate and inadequate, and lastly, into true and false. In treating of this last distinction, he observes that all ideas are in themselves obscure, and that the just and plain judgment on them is limited by the understanding, and that the confusion and error is owing to the use too frequently made by people of the word idea, which signifies both a thing conceived by the mind, and this use of the word is the cause of the greatest difficulties in philosophy.

Having thus examined the origin and composition of ideas, Locke proceeds to determine their general character, and to divide them into six classes. He divides them accordingly into clear and obscure, distinct and confused, into real and fantastical, adequate and inadequate, and lastly, into true and false. In treating of this last distinction, he observes that all ideas are in themselves obscure, and that the just and plain judgment on them is limited by the understanding, and that the confusion and error is owing to the use too frequently made by people of the word idea, which signifies both a thing conceived by the mind, and this use of the word is the cause of the greatest difficulties in philosophy. He divides them accordingly into clear and obscure, distinct and confused, into real and fantastical, adequate and inadequate, and lastly, into true and false. In treating of this last distinction, he observes that all ideas are in themselves obscure, and that the just and plain judgment on them is limited by the understanding, and that the confusion and error is owing to the use too frequently made by people of the word idea, which signifies both a thing conceived by the mind, and this use of the word is the cause of the greatest difficulties in philosophy. He divides them accordingly into clear and obscure, distinct and confused, into real and fantastical, adequate and inadequate, and lastly, into true and false. In treating of this last distinction, he observes that all ideas are in themselves obscure, and that the just and plain judgment on them is limited by the understanding, and that the confusion and error is owing to the use too frequently made by people of the word idea, which signifies both a thing conceived by the mind, and this use of the word is the cause of the greatest difficulties in philosophy. He divides them accordingly into clear and obscure, distinct and confused, into real and fantastical, adequate and inadequate, and lastly, into true and false. In treating of this last distinction, he observes that all ideas are in themselves obscure, and that the just and plain judgment on them is limited by the understanding, and that the confusion and error is owing to the use too frequently made by people of the word idea, which signifies both a thing conceived by the mind, and this use of the word is the cause of the greatest difficulties in philosophy. He divides them accordingly into clear and obscure, distinct and confused, into real and fantastical, adequate and inadequate, and lastly, into true and false. In treating of this last distinction, he observes that all ideas are in themselves obscure, and that the just and plain judgment on them is limited by the understanding, and that the confusion and error is owing to the use too frequently made by people of the word idea, which signifies both a thing conceived by the mind, and this use of the word is the cause of the greatest difficulties in philosophy. He divides them accordingly into clear and obscure, distinct and confused, into real and fantastical, adequate and inadequate, and lastly, into true and false. In treating of this last distinction, he observes that all ideas are in themselves obscure, and that the just and plain judgment on them is limited by the understanding, and that the confusion and error is owing to the use too frequently made by people of the word idea, which signifies both a thing conceived by the mind, and this use of the word is the cause of the greatest difficulties in philosophy.
this property in ideas, that one suggests another, and this is the so-called association of ideas. There are associations of ideas which are natural and necessary, as well as arbitrary, false, and unnatural combinations. The danger of the latter is, that, if not set at rest if not once and for all having seen objects connected together by chance.

Hence the association, which was originally purely accidental, is invariably connected in the imagination, which consequently biases the judgment. Hence too a number of errors, not of the least consideration is the untiring labours of our sympathies and antipathies which not unfrequently closely verge upon madness.

This gives occasion to a variety of judicious observations on the right conduct of education, the means of guarding against the formation of such unwise connections, and, as far as may be, of regulating them when once formed, and of restoring the regular and due associations which have their ground in the very nature of the human mind and its ideas. What however are the leading laws of association Locke has not attempted to determine.

Before passing from this deduction of ideas to the examination of the nature and extent of the knowledge which is acquired by means of them, Locke devotes the third book of his Essay to the investigation of language and signs, which it is not important for our purpose to state.

Locke then proceeds to determine the nature, validity, and limits of the human understanding. All knowledge, strictly defined, is the perception of the agreement or dissonance of ideas in connection with sensation. This definition extends therefore only so far as we are able to perceive the validity of the combinations and relations of our ideas, that is, so far as we are enabled to discover them by intuition, demonstration, and sensation. Intuition, which is the perception of the agreement of ideas, must be admitted as applicable to all ideas; many must be proved by means of some intermediate ideas. This is the province of demonstration, every step of which however is an act of intuition. Demonstration again does not apply to the proof of all ideas, since in the case of many no middle ideas can be found by means of which the comparison may be made. Sensation is still more limited, being confined to what is actually passing in each sense. Generally, all knowledge directs itself to identity or diversity, co-existence, relation, and the sequence of things. Identity and diversity are perceived by intuition, and we cannot have an idea without perceiving it at the same time that it is different from all others. With regard to co-existence our knowledge is unlimited; for our ideas of substances are mere collections of aggregate of certain qualities; and as far as our ideas consist of these single ideas, it is impossible to see how far they are not combinable with others. Hence we cannot determine what qualities any object may possess in addition to those we have directly perceived.

Setting out with the notion of our knowledge of things, we have no intuitive knowledge thereof, except in the case of our existence; that of God is demonstrative, but of all other objects we only sensuously know that they exist, that we perceive mediately by sensation their existence by the senses.

Locke next passes to an examination of propositions, axioms, and definitions. The utility of axioms is denied on the ground that they are not the only self-evident propositions, and because equal if not greater certainty is obtained in all particular propositions and definitions. Moreover they do not serve to facilitate knowledge, for all particular propositions will find a more ready assent; as, for instance, the proposition, twice two are four, will be more easily admitted than that the whole is equal to the sum of its parts, of which we have no other but the more general propositions involved in them; they cannot therefore form the basis of any science: for example, no one has ever been raised on the basis of the principle of contradiction. They do not even contribute to the enquirer's knowledge, although he may be persuaded of them and finally convinced by them, and consequently they serve at best as endless dispute.

Among these barren and unprofitable axioms, Locke reckons not merely those that are identified with subjective affection, but also, or those in which a property of one idea is predicated of another e.g., man is an animal. By such judgments or propositions we learn in fact nothing, and our knowledge is not increased in the least degree. Knowledge can only be the result of experience, which is the basis of our most important conclusions.

Synthetical propositions therefore are alone of value. In the next place he examines certain metaphysical problems, and concludes of most of them that they do not admit of any precise solution, while others might easily be refuted, and no one only conducts the investigation of them free from all prejudices. Some very pertinent remarks are added upon the sources of error, and on enthusiasm and faith, the due limits of which are pointed out, and the important truth repeatedly insisted upon, that the justest of philosophers is the man who most carefully excludes with a division of the object-matter of science or knowledge, which he makes to be threefold. 1. Natural philosophy, or physics, which is the knowledge of things corporeal and spiritual. The end of this is speculative and metaphysical. 2. Ethics, which is founded upon our actions and powers and actions for the attainment of things good and useful, the end of it being not bare speculation, but right, and a conduct suitable to it. 3. The doctrine of man (existent), which is to consider the nature of the signification of the term for understanding of things or the conveying of its ideas to others. This is the most general as well as most natural division of the objects of the understanding.

Such is the celebrated Essay which has formed the basis of more than one school of modern philosophy, whose very opposite views may indeed find some support in the occasional variations and self-contradictions of its author. For while he was seeking to attach the meaning of all ideas to the things in his own power, which are his own actions for the attainment of his ends; or the signs which the mind makes use of in both, and the right ordering of them for its intelligent action.

With regard to Descartes and the idealists, endeavoured to show that in the attainment of science we set out from the knowledge of things, and the better knowledge was far from denying that the rational thought, which is the perfection of human cognition, is really and truly distinct from the motions of the mind or soul occasioned by sensation.

In the nature of ideas in the mind, Locke proceeds to illustrate the development of the particular into the general; and to show how their difference from the unreal creations of the fancy, proceeds to determine their degree of verity. This conception of the relation of the true and the false, of ideas and to knowledge, evidently implies an independent and spontaneous activity of the mind, which ascertains the true ideas impressed by external objects on the senses. Nevertheless there is another aspect of his theory which in some degree justifies the use which has been made of his name, and under which he appears to be proceeding in the direction of the doctrine that asent is entirely subjective, he nevertheless grants that outward objects constrain it; and as a consequence of such a view, he teaches that notwithstanding the idea produced in the mind by an outward object be a mere impression of the mind, it nevertheless revolts the mind's efficient cause; and that to this manifestation of outward objects by the senses there is invariably attached, as by a necessary consequence, the judgment that those objects exist really. It is therefore clear that, according to Locke, we receive from the senses not merely the object-matter of knowledge, but that likewise the forms under
LOCUSED JAW. [TITANUS.]

LOCKEREN, a town of East Flanders, in 51° 19' N. lat. and 3° 58' E. long., distant 6 miles north-west from Dendermonde, and 10 miles east-north-east from Ghent, on the High road from that city to Antwerp. In the 1st January, 1831, the population of the town amounted to 16,069 souls, and the number of houses to 2375. Several of the streets are regular and well built; the market-place is large, and surrounded by houses. There is a large and commodious hospital, built in 1528, with funds chiefly contributed by three private citizens, one of whom gave the ground upon which it stands. Besides the parish church there are three chapels, a handsome town-hall, an orphan asylum, a prison, and seven communal and mine private schools.

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

LOCUBIS was employed to designate the country of three districts, the Locri Epieneimili, the Locri Opuntii, and the Locri Oszal.

The Locri Epieneimili and Locri Opuntii, who appear to have been more ancient than the Locri Oszal, since the latter are not mentioned by Homer, inhabited the eastern coast of Europe, and were separated from the latter community by a mountain range which stretches from Mount Geta to the borders of Bocotia. The northern part of this range, which is much higher than the southern, was called Cynæus, whence the Epieneimili Locri derived their name. The Opuntii Locri derived their name from Opus, their chief town, on the borders of Bocotia.

The Locri Oszal were bounded on the west by Ætolia, on the north by Doris, on the east by Phocias, and on the south by the Corinthian Gulf. According to Strabo ( liv., p. 427) they were a colony from the Eastern Locri. The origin of their name is uncertain; none of the etymologies given by Pausanius (x. 38) and Strabo (ix. 427) appear to be satisfactory. The inhabitants of the Western Locri are said to have been a wild and barbarous people even in the time of the Peloponnesian war; and in their manners and customs they appear to have resembled their neighbours the Ætolians. The principal towns of western Locri were Amphissa and Naupactus. Amphissa (Stathmos, Strabo) at the mouth of the Crissum Gulf, was destroyed by order of the Amphictyons, B.C. 338, for cultivating the sacred ground of Crissa. It was afterwards rebuilt, and in the war with the Romans, B.C. 190, it is mentioned by Livy (xxvii. 3) as a place of considerable importance. Amphissa is said by Æschines (Cic., c. 29) to have been 60 stadia from Delphi, and by Pausanias (x. 38, sec. 20) 120 stadia. The real distance, according to Sir W. Gell, is seven miles. Naupactus (Nepako, or Lepanto), on the sea-coast on the borders of Ætolia, was for a long time the chief town of the people of that name; but after they had been destroyed there, in B.C. 425, at the close of the third Messenian war, those Messenians who quitted Ithome. On the termination of the Peloponnesian war it fell into the power of Sparta, and in later times was subject to the Ætolians.

The Locri appear to have been the earliest population of Eastern Locri (Strabo, vii. 321); but the country was also inhabited in very early times by some tribes of the Hellenic nation, probably by Ætolians. The Locrians pretended that they were the most ancient Hellenic people in Greece, and that Cyamus, their port, had been inhabited by Deucalion, when he first descended from Parnasus (Strabo, iv. 425).

The Locri Epieneimili, or Western Locri, who inhabited the southern extremity of Italy, were a colony, according to Ephorus, of the Locri Opuntii, but according to Strabo of the Locri Oszal. It would appear from a statement in Pausanias (iv. 3, sec. 1) that the Spartans took a part in the foundation of this colony. An account of the political constitution of the Locri Epieneimili is given by Diodorus Siculus, (iii. p. 243, English trans.). The time of the foundation of this colony is uncertain; according to some accounts it was founded B.C. 710, and according to others B.C. 693. The Locri Epieneimili are said to have been the first Greek people who had a written code of laws (Strabo, vi. 397), which was drawn up by Zaleucus about B.C. 664.

LOCUS. This word, or the Greek ὅλος, signifying something placed or situated on or at a certain surface over which a point may travel, so as always to be in a position which satisfies some given condition. Thus, suppose it required to find the position of a point at which a given line subtends a right angle: the answer is, that the number of all such points is infinite. Take as an example the surface of a sphere which has the given line for its diameter is such a point as was required to be found. This would be expressed as follows—the locus of the point at which a given line subtends a right angle, is the sphere described, having the given line as a diameter. If it were required to be in a given plane, its locus would no longer be the whole sphere, but only that circle which is the common section of the sphere and the given plane.

The following assertions are really nothing more than common propositions of geometry, stated in such a manner as to introduce the term locus.

(1) The locus of the vertex of an isosceles triangle described upon a given base is the straight line which bisects the base at right angles. (2) The locus of the vertex of a triangle which has a given base and a given vertical angle, is a circle of which the given base is the chord subtending a right angle. If the point of the base were required to be in a given plane, its locus would no longer be the whole circle, but only that circle which is the common section of the circle and the given plane.

The geometrical analysis of the Greeks depended much upon the investigation of loci, and the method of using them will sufficiently appear by one instance. Suppose, for example, it is required to describe a triangle of given area and one vertex angle, and a given base. Whichever point of the base were required to be in a given plane, its locus would no longer be the whole circle, but only that circle which is the common section of the circle and the given plane.

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LONG has been compared to a piece of tallow. In other species the sound is produced by the friction of the tibiae against the elytra.

The section Sclatioria contains three families, to which the names Achatelidae, Gyrilidae, and Locustidae are applied by Dr. Leach. The family Achatelidae is thus defined:—*Eury horizontal; wings longitudinally folded, often produced backwards, and sometimes to the tip; tarsi four-jointed, the third pair of legs being at the tip of the abdomen.

The genera Tridarctus and Myrmecophila are also included in the present family. In the family Gyrilidae the wings are disposed in an oblique manner when folded, the marvellous animal described by the street author, and the abdomen exserted in the female, of a long and compressed form, and recurved.

The insects of this family form the genus Locusta of the *Regne Animal.* The *Acrida viridissima* is the largest among the British species of the present group. This insect is not uncommon in some parts of England, and is about two inches in length and of a bright green colour.

The family Locustidae is distinguished by the following characters:—Wings when folded meeting at an angle: tarsi three-jointed. The antennae are not reduced; the street author, as usual, misses an eye. The Locustidae of Dr. Leach are comprised in the genus Locustellas by Latreille. Unfortunately there is much confusion as regards the names of some of the genera and subgenera contained in this as well as the other families above mentioned, and the attempt to apply to large groups of insects by the author, as usual, misses an eye. It is only correct to say, in the words of the most recent travellers confirm them. Mr. Barrow, in his *Travels,* states, 'that in the southern parts of Africa an area of nearly two thousand square miles might be said literally to be covered with them. When driven by another species from their homes they are driven into the sea for fifty miles a bank three or four feet high, and when the wind was south-east the stench was so powerful as to be smelt at a distance of 150 miles.'

Mesra. Kirby and Spence's *Introduction to Entomology* gives a good account of this terrible insect in 1815. In some parts of Africa they are cooked and eaten by the natives. In the names of Senegal are said to dry them, and having reduced them to powder, use them as flour.

Genus *Gomphocerus* (Leach). Hinder legs exceeding the breadth of the body; antennae filiform. The two sexes are a simple club in both sexes; anterior tibia simple. This genus contains numerous species, six or seven of which occur in England. They are usually of small size, and, together with the smaller species of the preceding genus, are now almost extinct.

Genus *Acridum* (Leach). The species of this genus can be distinguished by the large size of the scutellum, which is produced posteriorly and covers the wings. They are found in hot sandy banks.

The genus *Proctonia* (Thunb.) has been established for the reception of certain African Locustellas, which have a transparent pellicle between the terminal hooks of the tarsi, the antennae filiform, the posterior legs shorter than the fore, the antennae recurved, and the abdomen vesicular—at least in one of the species.

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

**LOCUST TREE** is the Robinia Pseudacacia of botanists, a North American forest-tree. [Robini.] The same name has also been given to the Caroamar Siliqua, or Carob Algarroba tree which inhabits the Levant, and bears large pods, filled with nutritious pulp.

**LOCUSTA** (Crustaceology). [Palinurus.]

**LODDON** [Berks.]

**LODEV,' a town in France, capital of an arrondissement, in the department of the Hérault, on the road from Paris to Narbonne, Perpignan, and Barcelona. This town is noticed by Pliny, who calls the townsment Louvani. In the later Roman documents the name appears to have been corrupted to Lodve, whence the name Lodève. It was included in the Roman province of Nicaea. In the middle ages it was the seat of a vice-county; but in the crusade against the Albigenses the bishops of Lodève became lords of the town, and remained so till the French revolution. The bishopric (now suppressed) was erected in the fifth century: the bishop was a suffragan of the archbishop of Narbonne. The town stands in a pleasant valley amid the lower slopes of the Cévennes, on the left bank of the Lergue, a small feeder of the Hérault. It is surrounded by antient ramparts, and the population in 1582 was 9834 for the town, and 9919 for the whole commune; in 1836 it had increased to 11,208 for the commune. The chief manufacture is that of coarse woollen cloths; hats, leather, curthenned, and soap are made; olive and corn are the chief products of the land, and white gypsum is worked in the neighbourhood.

There are several judicial or fiscal government offices, an Agricultural Society, and a high school. Cardinal Fleury was born here.

The arrondissement of Lodève has an area of 474 square miles, and is subdivided into 72 communes; the population was 55,911 in 1831; in 1836 it was 57,730.

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

The actual province of Lodri and Crema is thirty miles in length from east to west, from the river Oglio near Orzinovi to the river Lambro near Melegnano; and above twenty communes are situated in the jurisdiction of the province of Bergamo to the bank of the Po opposite Piacenza. It is divided into eight districts, namely, 1. Lodi, with 22 communes, 1835 houses, and 28,670 inhabitants; 2. Telobunoperego, 29 communes, 1320 houses, and 12,926 inhabitants; 3. Santerno, 17 communes, 1582 houses, and 16,037 inhabitants; 4. Borgeatto, 19 communes, 1482 houses, and 19,425 inhabitants; 5. Cusino, 21 communes, 2535 houses, and 21,695 inhabitants; 6. Combogna, 24 communes, 4534 houses, and 36,926 inhabitants; 7. Melegnano, 15 communes, 5636 houses, and 15,474 inhabitants; 8. Crema, 50 communes, 5498 houses, and 45,888 inhabitants. The soil is partly sown with corn and pulse, and partly planted with the vine and mulberry-trees; but the beneficial effect of artificial irrigation by which feet numerous corns, from the mill, and the rich cheese is made, known in Lombardy by the name of Lodigiano, but which, by an old miseromne, is called in Southern Italy and the rest of Europe by the name of Parmesano. The annual produce is said to exceed 14,312 cwts. of barley, 1,029,997 cwts. of hay, 6402 cwts. of cheese, 2187 cwts. of butter, 4384 cwts. of silk cocoons, besides corn and wine. The number of cattle is stated at 36,046 heads of large cattle, 10,070 horses, 1135 asses and mules, 1396 sheep, and 17,870 pigs. (Census of 1833.)

**LODI,** the capital of the province, situated on the high
LOG and LOGLINE. This is the apparatus by which the velocity of a ship's motion through the water is measured. If at any moment, on a piece of wood, other light substance, be thrown out of a ship while sailing, as soon as it touches the water it ceases to partake of the ship's motion; the ship goes on, and leaves it behind. If then after a certain interval, say of half a minute, the distance of the same from the moving body be accurately measured, the rate of the ship's motion through the water will be ascertained; we do not say the actual rate of the ship's going, but only that of its motion through the water, because in many cases currents exist, and the wood itself is carried along by the water, though the rate of the portion of motion is ascertained, the number of knots, with the odd tenths, are written on the board, each in its proper ruled column; also the course of the vessel, the direction of the wind, and any remarks made at the moment.

The whole ship is observed against a fixed mark, the twenty-four hours the whole is copied into a blank book called the log-book, which is ruled for the purpose in the same way as the log-board, and in which also all the transactions relative to navigation are inserted, such as bearings, distances, tides, currents, and the like.

This is the principle of the log: in practice the log is a flat piece of wood, sometimes shaped like a fish, but more generally of the figure of a quadrant, loaded with lead at one of its edges, to make it float upright, this is affixed to a line set to windlass and divided into equal lengths by little pieces of knotted twine rive into it. These divisions begin about twenty or thirty yards from the log, where a piece of red rag is usually fastened, in order to show the distance. All the line from the red rag to the rag is called the straig line, and is of course omitted from the account. When the log is thrown into the sea, which is done from the lee quarter of the vessel, the log-line, by the help of a reel on which it is wound, is immediately veered out, at least as fast as the ship sails, so that the red rag leaves the red, a half-minute glass is turned, and when the sand is all run down, the red is stopped. Then by measuring the quantity of line run out, the distance sailed by the vessel in half a minute is known, and by adding together the distances of going per minute, and ways of dividing the line, the most usual of which is to place the knots at distances of fifty feet from each other; now as 120 times half a minute make an hour, and 120 times fifty feet make almost a geographical mile, so many knots will run from the red in one experiment as the vessel sails miles in the hour; from this comes the expression of a vessel's sailing so many knots an hour—meaning miles. Fifty-one feet would be more accurately 120th part of a mile than fifty feet; but it is found practically that the ship's way is always a little more than that given by the log, arising from the circumstance that the line is unavoidably pulled in some degree, and the log is consequently not a fixed point; it is moreover safer to have a ship behind the log-line before it, which does many commanders to shorten the distances between the knots to forty-eight and even forty-five feet. Whatever distance be taken, it is found convenient to subdivide it into ten parts for decimals of a mile. Careful commanders re-measure these distances at intervals of days from the original length. In case of an alteration they apply a correction to the rate found by a common process in the rule of three—as the length which the commander reckons upon is to the existing, so is the apparent rate to the true rate. A similar correction is required if the half-minute glass is found to be wrong.

In the best regulated vessels the log is hove every hour; and in calculating the ship's going it is supposed that the rate of wind between the observations has been the same, and the wind has sensibly varied, or more or less sail has been set during the time, then an allowance is made according to the discretion of the person who keeps the account.

About twelve years ago a very curious log was invented by Mr. Hooker, which though ingenious was too complex to come into general use; its object was to afford as great a resistance as possible to this pull of the line, and at the same time to be easily drawn back to the ship when its work was done. This log is shaped like a fish, and the line is in its mouth.

A more practically useful suggestion of Mr. Hooker was to mix a paste of two or three parts linseed oil and one part fish oil, which prevented its shrinking; a matter of no small importance when it is considered that a new line without preparation will lose 50 or 60 feet of its length by contraction when wetted.

This is the principle of a log and log-line, but the account of the ship's progress as deduced from observations of the log. The log-board is either a large piece of plank, blackened, ruled, and prepared for writing on with chalk, or else a slate with divisions scratched upon its surface. At noon and longitude, at some place whose position is known comes in sight; the true place of the ship is then substituted in the log-book for that obtained by dead reckoning, and from that place subsequent reckonings are made until another observation.

A log, when formerly sold in seaports, properly ruled for recording the events of a voyage. Although, strictly speaking, the log-book is confined to these objects, it is usual to include under the same appellation the whole of the ship's journal, or diary of occurrences.

The word LOG is derived from the Greek Word λόγος, the number of the ratios; and the reason for the appellation will appear in the course of this article. We assume that the reader has the common knowledge of logarithms, and of the method of using them.

We have abandoned the intention of giving a view of the rise and progress of logarithms, for the following reasons. The subject is now one of such wide extent, when its theory and practice are both included, that it would be like writing a book to put together all the parts which would be needed in an article professing to give an account of the present state of logarithmic algebra, as well as of logarithms in computation. If we were to confine ourselves to the latter only, the view of the subject would be too confined. And since the subject has been so well explained and developed in the most modern algebraical form, it would take too large a space to explain at length the processes of the early writers in terms intelligible to those who are not conversant with their writings. We shall therefore devote the first part of this article to such explanations as will be fresh from modern books of algebra, to read the various histories which exist with facility; and we shall then point out how to deduce the principal formulae connected with the art.

The early history of logarithms will be found at length in the preface to Dr. Hutton's Tables; in the 'History of Logarithms' contained in the first volume of Dr. Hutton's
The idea of logarithms originally arose in the mind of Napier from the desire to make addition and subtraction supply the place of multiplication and division. A table, in which are registered 1, a, a², a³, &c., supplies this desideratum to a certain extent; for since a multiplied by a\(^n\) gives a\(^{n+1}\), we find the product of the two first by adding their exponents, and looking in the table for the (x + y)\(^{th}\) power. Thus for the 1st, 2, 3, 4, 5, &c., a table of logarithms is easily constructed, a specimen of which is as follows:

<table>
<thead>
<tr>
<th>Num.</th>
<th>(\log)</th>
<th>Num.</th>
<th>(\log)</th>
<th>Num.</th>
<th>(\log)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0.8750</td>
<td>10</td>
<td>1.0000</td>
</tr>
<tr>
<td>1</td>
<td>0.0000</td>
<td>6</td>
<td>0.7782</td>
<td>11</td>
<td>1.0414</td>
</tr>
<tr>
<td>2</td>
<td>0.3010</td>
<td>7</td>
<td>0.8451</td>
<td>12</td>
<td>1.0792</td>
</tr>
<tr>
<td>3</td>
<td>0.4771</td>
<td>8</td>
<td>0.9200</td>
<td>13</td>
<td>1.1139</td>
</tr>
<tr>
<td>4</td>
<td>0.6021</td>
<td>9</td>
<td>0.9542</td>
<td>14</td>
<td>1.1461</td>
</tr>
</tbody>
</table>

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

Such a table would be useless for general purposes, since, however much more than it contains, it would take a very little greater than unity, the powers will increase but slowly, and every whole number within given limits may be made either a power of a, or very near to a power of a. Suppose for instance that we wish for a table of logarithms for numbers either less or more than powers of the same number. If we take 100000, the logarithm of 100000 is 5, and 100000 is a power of 10. We may find this logarithm to be 5, and extract it for any other number, or fractions of a power of 10, and we shall have the logarithm of such number.

It is evident from the above that the connection between a logarithm and its number must be of the following kind: when the logarithm increases in arithmetical progression, the number must increase in geometrical progression; and the greater the ratio of progression, the greater the increase of the number. Consequently, if we have an increase of the ratio of progression, we shall have an increase of the logarithms.

The merit of Napier is threefold: first, he distinctly saw that all numbers, within any given limit, may be either terms, or as near as we please to terms, of a geometrical progression; secondly, he had the courage to undertake the enormous labour which was requisite for the purpose; thirdly, he made an anticipation of the differential calculus in developing the primary consequences of the definition. The predecessors of Napier probably did not well understand the notion of a quantity varying in geometrical ratio, while another varied simultaneously, but in an arithmetical ratio. The difficulty is that which a beginner finds in seizing the notion of compound interest carried to its extreme limit, so that every fraction of interest, however small, begins to make interest from the moment it becomes due. We have preferred to omit this consideration in the article Interest, where it would have been of no practical use, and to introduce it here, where it may aid in the explanation of the first principle in logarithms.

Let \(A\) be \(1+\) a year, and consequently, at the same rate of interest, it becomes \(A(1+\) a year, Suppose however that interest, instead of being payable yearly, is paid \(z\) times in a year, and that interest makes interest from the moment it is paid. Consequently, at the end of the first, second, &c. fractions of a year, the pound first put out becomes

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

or

\[
\left(1 + \frac{z}{x}\right)^{30103} \text{ at the end of one year, and } \left(1 + \frac{z}{x}\right)^{30103}
\]

at the end of \(z\) years.

If we may make \(z\) as great as we please, that is, if we may make payments of interest follow one another as quickly as we please, we may make the increase of the pound amount as nearly as we please to a gradual increase, of which it must be the characteristic that in successive equal times the amounts are in geometrical progression. Let \(A\) become \(AC\) in a time represented by \(bc\). Divide \(bc\) into any number of equal parts, and in the successive equal times \(bp, pq, qr, \&c., let a point move through \(BP, PQ, QR, \&c.,\) in the article Acceleration is explained the manner in which a succession of impulses, sufficiently small in amount, and often repeated, may be made to give, as nearly as we please,
as the logarithm of \( x \) exceeds or falls short of that of \( y \).

Let \( \phi \) be the function which a number is of its logarithm; so that \( \phi = \log x \). If then \( a + b \) be logarithms of \( x \) and \( y \), and if \( \phi \) be the logarithm of \( x \), then \( x: y = \phi : \phi + 1 + \phi x : \phi y \), and \( \phi \) and \( \phi + 1 + \phi x : \phi y \) are severally \( \phi a, \phi (a+b), \phi c \) and \( \phi (c+b) \). But \( x' = y' \).

\[
\phi a + \phi (c + b) = \phi c + \phi (a + b)
\]

Let \( a \) or \( b \) be the number which has \( 0 \) for its logarithm; then \( a = 0 \); and calling \( N \) the number in question, we have

\[
N x = \phi (c + b) = \phi c + \phi b,
\]

or

\[
N = N N.
\]

But by the theorem proved in the article BinoNomial Theo-

rem (p. 413), this can only be true on the supposition that

\[
\phi c - N
\]

is such a function of \( C \) as \( C \), where \( C \) is independent of \( c \). Consequently, the number whose logarithm

\[
\text{is} \quad C = N
\]

must be \( N^C \). This evidently satisfies the conditions, and the theorem quoted shows it to be the only function which satisfies the conditions.

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

\[
C \log x = x:
\]

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

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

\[
A^a = B^b = x,
\]

whence

\[
B = A^b, \quad \text{or } B = A^b\quad (\text{base } A) = a, b
\]

and

\[
\text{log } B \quad (\text{base } A) = \text{log } x \quad (\text{base } A) = \log x \quad (\text{base } B) = \log \frac{A}{B} \quad (\text{base } A)\]

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

We now proceed to the method of determining logarithms.

In the article Limit it is shown, by means of the binomial theorem, that of the two series

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

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

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

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

which is very convergent, and is \( \pi/2189281 \) very nearly.

This remarkable series is generally denoted by \( e \); Laplace always uses \( c \) for it), and we have

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

In Napier's system, then (whence we shall presently show that this is Napier's system, \( x \) is the logarithm of \( 1 + x + \frac{x^3}{3} + \ldots \); or the logarithm being given, the number can be immediately found.

Since the last equation is universally true, for \( x \) write \( \log a \times x \), where \( \log a \) means \( \log a \quad (\text{base } a) \). The first side then becomes

\[
\log a x = \log a + \log x = \frac{\log a x}{x} + \frac{(\log a)^x}{x} + \ldots
\]

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

**Definition.**—By the logarithm of a number let any such function of that number be understood as has the following property. When \( x \) is to \( y \) as \( x' \) is to \( y' \), the logarithm of \( x \) exceeds or falls short of the logarithm of \( y \) by as much
\[
\text{LOG}
\]
\[
\frac{a^n - 1}{x} = \log a + \frac{(\log a)^2 x}{2} + \ldots: \\
\text{if } x \text{ be diminished without limit, we have then}
\]
\[
\text{Limit of } \frac{a^n - 1}{x} = \log a \text{ (base } a) ;
\]
or, for a given (and very small) value of \(x\), \(a^n\) is very nearly in the proportion of the values of \(a^n - 1\). This is the theorem to which we have before alluded.

Let \(a = 1 + b\), then

\[
(1 + b)^n - 1 = \frac{b}{x} + \frac{b^2}{2} \cdot \frac{x}{3} + \frac{b^3}{3} \cdot \frac{x}{4} + \ldots;
\]
if \(x\) diminish without limit, the limit of the first side has been shown to be \(\log (1 + b)\), the base being \(a\), which is always to be understood when the contrary is not expressed. The limit of the second side is easily found by making \(x = 0\), and we thus have

\[
\log (1 + b) = b - \frac{b^2}{2} + \frac{b^3}{3} - \frac{b^4}{4} + \ldots,
\]
which however is only convergent when \(b\) is not greater than unity. Since this last is universally true, we find, by substituting \(-b\) for \(b\),

\[
\log (1 - b) = -b + \frac{b^2}{2} - \frac{b^3}{3} + \frac{b^4}{4} - \ldots;
\]
and subtracting the first from the second, remembering that

\[
\log (1 + b) - \log (1 - b) = \log \frac{1 + b}{1 - b},
\]
we find that

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

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

\[
\log x = 2 \left\{ \frac{1}{x + 1} - \frac{1}{x + 2} + \frac{1}{x + 3} - \frac{1}{x + 4} + \ldots \right\}
\]
which is always convergent, but converges very slowly when \(x\) is considerable. If however we make

\[
x = \frac{x + 1}{x}, \text{ or } x + 1 = \frac{2x + 1}{x} + \ldots;
\]
then, remembering that \(\log \frac{1}{x} = \log (1 + x) - \log x\), we have

\[
\log (x + 1) = \log x + 2 \left\{ \frac{1}{2x + 1} + \frac{1}{3(2x + 1)} + \frac{1}{4(2x + 1)} + \ldots \right\}
\]
which is very convergent when \(x\) is even so small as 1, and serves to find the logarithm of any number when that of the next lower number is given. The two following series, which may be easily proved from the preceding, will complete the list of those which are most useful in practice:

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

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

It only remains to show the identity of this system with that of Napier. If \(f\) be the number of seconds elapsed from the beginning of a motion, and if \(a^2\) be the length described in that time, then the time of the logarithm of the length described, the difference between the time of \(a^2\) to that of \(a^3\), is that part of Napier's logarithms of the series called \(e\). But in the system where base is 10, \(\log a = 2:3025851\), which is the velocity at starting assumed by Briggs.

By the foregoing series a system of Napierian logarithms may be calculated with a very small fraction of the labour which they cost their inventor. This having been done for all whole numbers within the given limits, the logarithm of any fraction is readily found by subtracting the logarithm of the denominator from that of the numerator.

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

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

The powers of ten are ranged in the following table:

\[
\begin{align*}
10^{-4} & = 0.001 \quad 10^0 = 1 \quad 10^1 = 10 \\
10^{-3} & = 0.01 \quad 10^2 = 100 \\
10^{-2} & = 0.1 \quad 10^3 = 1000 \\
10^{-1} & = 1 \quad 10^4 = 10000 \\
\end{align*}
\]

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

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

\[
\log (\text{base } a) = \log x = \frac{\log a}{\log x} \cdot \log x.
\]

The factor \(1 + \frac{a}{\log x}\), which converts Naperian logarithms into those whose base is \(a\), is called the modulus of the system whose base is \(a\). In Briggs's system this modulus is \(4342945\) nearly, and the logarithms of this system being called common or tabular logarithms, we have—

\[
\text{common } \log x = 4342945 \times \text{Nap. } \log x = 49 \times \text{Nap. } \log x, \text{ very nearly.}
\]

\[
\text{Nap. } \log x = 2 \times 3025851 \times \text{com. } \log x = \frac{100 - 1}{43} + \frac{1}{4000} \times \text{com. } \log x.
\]

In the article Negative and Impossible Quantities will be found a further extension of the theory of logarithms: in Tables will be found a list of tables for different purposes. A treatise on computation by logarithms will be found in the 'Library of Useful Knowledge,' in Examples of Processes of Arithmetic and Algebra. LOGARITHMIC CURVE and LOGARITHMIC SPH.

The former has for its rectangular equation \(y = ax^2\), and its most remarkable property is that its subtangent is the same at every point of the curve. The latter has \(r = ca^\theta\) for its polar equation, and its tangent always makes the same angle with its radius vector; whence it is called the equiangular spiral.

LOGIC [Organon.] LOGISTIC [Proportional.] LOGOS, λογος, the Greek for a word, is used as a theological term.

1. The Jewish doctrine of the Logos. The phrase the Word or Memra of Jehovah (יהוה谈论) occurs repeatedly in the Chaldee Targums, where it commonly stands in the place of אלוהים (Jehovah) in the Hebrew
original. There are however passages in which this phrase appears to denote a distinct personal existence; and many eminent critics, among whom are Berthold and Wegscheider, are decidedly of opinion that the Targumists intended it to apply to the Messiah; 'plainly showing it to have been their belief that the Shothenah, or Who, as some indeed themselves say, would employ the future Messiah, when he should be born, as the instrument of his gracious designs, and would be joined to him in a personal union.' (Berthold, Christol. Jud.)

Logos is the Greek for Logos, but his views on the subject are involved in much obscurity. He seems however to have had the idea of a two-fold Logos; the one denoting a conception in the divine mind according to which the world was created; the other a personal existence, the Son of God, the personification of the divine nature, though inferior to the supreme God, the Creator of the world (δημογος), presiding over the universe, the instructor and guide of man, the High Priest and Mediator between God and man. These two ideas of the Logos he often confounds together. The passages from Philo are too numerous and too important to quote; but he speaks of the Logos as the essence of all eternity. ...
The department is almost entirely a flat, having in the south-east part a considerable number of stags, or pools, and marshes. The supracretaceous strata which occupy the chalk-basin of Paris extend into the department from the north-east, and occupy the banks of the Loire as far as the junction of the Beurnon. In all other parts of the department it is occupied by the chalk itself. The general inclination of the surface is toward the west and south-west.

The principal river is the Loire, which has a tolerably direct south-west course of 30 miles, or rather more, through the department, and as it enters the department from the north-east, and after receiving, each of them, a few small streams, fall into the Loire on the south-east bank, near one another, a few miles below Biou. The Cae Landemont, a small stream, falls into the Loire on the south-east bank, near one another, at Biou and the Cosson enter the department from the east, and after receiving, each of them, a few small streams, fall into the Loire on the south-east bank, near one another, a few miles below Biou. The Cae Landemont, a small stream, falls into the Loire on the south-east bank, near one another, a few miles below Biou.

The department is divided by six 'Routes Royales,' or government roads, having an aggregate length of 169 miles, viz. 128 in repair, 28 out of repair, and 33 unfinished. The most important of these roads is that which runs from Paris through Chateaudun and Vendôme to Tours. The next in importance is that which runs from Paris by Orléans and Tours, all on the north side of the Loire, divides; one branch continuing along the north bank of the Loire to Tours, where it joins the main road through Châteaudun, crosses the Loire, and runs to Angoulême and Bordeaux; the other branch crosses the Loire at Blois, and runs to Nevers and Montargis, across the Loire from Paris to Limoges, Cahors, and Toulouse. Another road runs from Blois to Vendôme and Le Mans.

The soil varies much; the northern part is in general more productive than the southern. About three-fifths of the whole are arable; and about one-seventh consists of land entirely unproductive, or of open waste land on which poor pasturage is suffered, and was formerly inhabited by the ancient forests. The quantity of meadow and good pasture land is small; but the vineyards are tolerably extensive. The quantity of grain raised is greater than the consumption of the department. The best wines are the white wines of Montrichard and Bellenois, and the vineyards are large, and of an excellent quality; the quality is very variable; the latter for sugar, are cultivated on a large scale. Horses, horned-cattle, and sheep are bred; the last in considerable number; there is a stud maintained at Blois for the improvement of the breed of horses; and prizes are given to the owners of the finest animals. Poultry, game, and fish are abundant. The mineral productions are limestone, gun-flints procured from the chalk strata, and potter's clay; some iron and lead mines are worked.

The department is divided into three arrondissements, as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Sq. Miles</th>
<th>Pop. in 1836</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blois, central</td>
<td>971</td>
<td>118,561</td>
</tr>
<tr>
<td>Vendôme, north-west</td>
<td>650</td>
<td>44,722</td>
</tr>
<tr>
<td>Romorantin, south-east</td>
<td>803</td>
<td>47,722</td>
</tr>
</tbody>
</table>

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

The three arrondissements of Blois are Blois, capital of the department, on the north bank of the Loire (population in 1831, 11,002 for the town, or 13,138 for the whole commune; in 1836, 15,528 for the whole commune) [BLOIS]; a suburb of Blois, south of the Loire; Mer and Suerue, near on the north bank of the river opposite Suezvre, on the south bank of the same river; Héron, Les Oueses, Marchenoir, and Ouzouer le Marché, north of the Loire, but distant from it; Chambord on the Cosson; Braziain and Cour-Cheverny on or near the Beurnon; Contres and Cormier on the Beurnon, a feeder of the Beurnon; and St. Aignan and Montrichard on the Cher; all south of the Loire. Mer (pop. 1717 for the town, 3733 for the whole commune) is in the centre of a vine district, and the townspeople carry on trade in wine and brandy. Suezvre is a small place, with a population of 1816, and St. Aignan (pop. 2228 town, 2772 whole commune) are some manufactures of woollen cloth. There are flint quarries near it. Chambord has a castle built by François I. from the designs of the architect Perriére; 1600 men were employed upon it for twelve years; but it was not quite finished until the reign of Louis XIV. It is a building imposing from its extent, but irregular in its construction. It is an assemblage of towers large and small, having its parts figured on the surfaces of several small stones. There is a remarkable double spiral staircase by which one person can ascend and another descend without seeing each other. Chambord was till the time of Louis XIV. the frequent residence of the French kings. It was bestowed upon the Marquess of Montmorenci, appointed by Louis XIV. a peer of France, and Bonaparte on Marchal Berthier, prince of Wagram. At Mearhs on the north bank of the Loire, between Suezvre and Blois, is a fine château in a park: it was formerly the residence of Madame Pompadour, mistress of Louis XV., and subsequently of Marquis Victor de Bellono. It is now the residence of Prince Joseph de Chimay.

The arrondissement of Vendôme is Vendôme, or Vendoms, Morée, Freteval, Les Roches, Montoire, and Chateaudun, all on the north side of the Loire. It divides; one branch continuing along the north bank of the Loire to Tours, where it joins the main road through Châteaudun, crosses the Loire, and runs to Angoulême and Bordeaux; the other branch crosses the Loire at Blois, and runs to Nevers and Montargis, across the Loire from Paris to Limoges, Cahors, and Toulouse. Another road runs from Blois to Vendôme and Le Mans. The main road from Paris by Orléans and Châteauroux and Limoges crosses the eastern side of the department. The 'Routes Départementales' are fourteen in number, and have an aggregate length of 253 miles, of which 149 are in repair, 29 out of repair, and 75 unfinished. The by-roads and paths are in number two thousand two hundred and seventy-four, and have an aggregate length of 150 miles. The soil varies much; the northern part is in general more productive than the southern. About three-fifths of the whole are arable; and about one-seventh consists of land entirely unproductive, or of open waste land on which poor pasturage is suffered, and was formerly inhabited by the ancient forests. The quantity of meadow and good pasture land is small; but the vineyards are tolerably extensive. The quantity of grain raised is greater than the consumption of the department. The best wines are the white wines of Montrichard and Bellenois, and the vineyards are large, and of an excellent quality; the quality is very variable; the latter for sugar, are cultivated on a large scale. Horses, horned-cattle, and sheep are bred; the last in considerable number; there is a stud maintained at Blois for the improvement of the breed of horses; and prizes are given to the owners of the finest animals. Poultry, game, and fish are abundant. The mineral productions are limestone, gun-flints procured from the chalk strata, and potter's clay; some iron and lead mines are worked.

P. C. No. 662.
amusement; the townsman manufacture some serges and other cloth, and glass. Montoire, otherwise called Querhoent (pop. 2433 town, 3072 whole commune), has a good square formed by a former duke of Tal- lard; the inhabitants manufacture serges and other woollens.

In the arrondissement of Vendôme as many as seven hundred buildings were brought up at the charge of the chari- table institutions of Paris.

In the arrondissement of Romorantin are Romorantin, St. Genoux, La Ferté-Imbault, and Salbris on the Saône; Menetou and Belles on the Cher; and La Ferté St. Aignan. The two last are situated on the right bank of the Loire, Morantin, a brook which flows into the Saône at this spot. It was formerly the capital of the Saône district of Sologne; and was the place from which the chancellor L'Hôpital issued an edict (called the edict of Romorantin) which vented the establishment of the constitution in France.

The population was, in 1831, 6537 for the town, and 6995 for the whole commune; in 1836 it was 7181 for the whole commune. The principal manufacture is that of woollen cloth. There are some other manufacturing offices here. Belles (pop. 1215 town, 4612 for the whole commune) has an ancient castle. The inhabitants manufacture some woollen goods. There are several corn-mills. La Ferté Imbault has a château or castle, which was in the time of Louis XI. 1642. an officer of the Marechal de Lorraine.

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

The department of Loir et Cher constitutes the diocese of Blois; and the bishop of which is a suffragan of the archbishop of Paris; it is included in the circuit of the Académie Universitaire and in the Cour Royale of Orléans. It is the seat of the sixth military division, the head-quarters of which are at Tours. It sends three members to the Chamber of Deputies, and one for the education of the clergy. It is also one of the rest of France of the young men enrolled in the military census of 1828-29, only 27 in 100 could read and write; the average of France being nearly 40 in 100.

This department was in the days of Caesar occupied by the Carnutes and the Turones. The greater part of it afterwards constituted the Blaisois, or Blaisois [Bois], but the department also includes part of the former districts of Touraine, Orléanais proper, and Ducons. It contains a great many châteaux.

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

The basin of the Loire includes a large portion of the centre and western parts of France, constituting nearly a fourth part of the whole country. The greatest length of the basin is from north-west to south-east, from the sources of the Vienne, a feeder of the Mayenne, to Mount Léon, 370 miles; its greatest breadth is from the sources of the Ouche, which flows by the Clairns into the Vienne, to the source of the Arroux, 224 miles. Its area is estimated at 30,783 square miles, or about that of England.

The Loire rises in Mount Gonot, in the department of Ardèche. Its source is nearly 4500 feet above the level of the sea. The general direction of its course is at first north-west to north of Orléans, where it turns westward and flows into the Atlantic. Its first great tributary, the Allier, unite with it on the left bank, just below Nevers, at an elevation of 550 feet above the level of the sea, and at a distance of about 200 miles from its source. In the upper course of the Loire, at the junction of the Allier, the valley of the Loire is narrow, being bounded on the east by the prolongation of the Cévennes, which form the eastern limit of its basin, and on the west by a branch from the Cévennes, which divides the valley of the Loire from that of the Allier. The tributaries of the Loire, until the junction of the Allier, are all small; the Arroux alone, which joins it on the right bank, is navigable.

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

From the junction of the Cher and Indre, the Loire has a general western course of 36 miles, to which the river. It receives, on its left bank, about 12 miles below the junction of the Cher, the Vienne, another of its great tributaries; and 36 miles lower down, it receives the Maine or Mayenne, the only stream of magnitude which fails it in its course to the mouth of the river. At the junction of the Mayenne the height of the bed of the river is about 115 feet; and at Nantes, 48 miles below, and only 36 miles from the mouth of the river, 53 feet are the true depth of the Loire.

The whole course of the Loire is about 530 miles. The navigation upwards and downwards commences at Roanne, 116 miles from its source, where its joins the Trambouze. It has, in the part above Roanne, a total fall of 1000 feet. It rises on the left bank, 90 miles below Orleans, and from this point, with its affluents, it can be navigated as far as Poitiers. It is a good feeder for floating timber, particularly for deals for boat-building; and boats can descend the stream from St. Rambert, above Roanne, to Poitiers.

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

Two of the five great affluents of the Loire have been described elsewhere. The Mayenne is the first; the Gironde is the second. The basins of the Loire at the mouth of the river are nearly 2000 square miles, of which 65 of which it is navigable. It has Montluçon, St. Amand, and Bourges.

The Indre rises in the remote ramifications of the central group of the mountains of Auvergne, and has a course of 36 miles, only about 50 of which are navigable, viz. from the junction of the Loire. It drains a large extent of country, and receives several considerable affluents.

The Gironde rises in the southern slope of the Armé- nian chain, and has its course first west, and then south past Mont-Louis, and Angoulême, and at La Roque, the junction of the Loire; its whole course is about 97 miles, or half of which, viz. from Lavall, is navigable. Though not so long as the Allier, the Cher, the Vienne, or even the Gartempe, it is, except the Mayenne, its principal feeder is the Sarthe, a stream more than 3 miles longer than the Mayenne, which flows by Aizenay and La Mans, and is navigable from below La Mans 60 miles. The Sarthe receives the Loire (distinguished from the two rivers above mentioned) as a right bank; it is a river of almost equal length with itself, which is navigable from Château du Loir. 53 miles.

The Loire was known to the Romans by the name Ligur (Aveyron, Strabo) or Liguria; the Allier by those of Elvaet and Elurs, and the Cher by those of Eluaet and Elurs, names of any of the other tributaries have been recorded.

We subjoin the following summary of the navigation of this vast river-system from the official statements of the French government —
The department belongs almost entirely to the basin of the Loire, which river enters it on the south, just below Aurec (Haute Loire), and flows northward, past St. Rambert (where the downward navigation commences), Feurs, and Roanne (where it becomes navigable, both upward and downward), into St. Etienne. From the narrowness of the valley through which it flows, its tributaries are all small; the Purand, the Coize, the Loise, the Trambouze, and the Cornin join it successively on the right bank; and the Bouzon, the Maire, the Ligon, the Aut, the Repapien, and the Besse come in from the left. A small portion of the south-eastern extremity of the department belongs to the basin of the Rhône, and is skirted by that river, which divides it from the department of Isère. The Gier and the Diaume, which belong to the system of the Rhône, water this part. The official reports of the navigation of the Loire in this department amount to 83 miles, which extends it far above Roanne or St. Rambert, and shows either that the upper part has been made navigable of late years, or that the part used only for floating timber is included in the return. About five miles of the navigation of the Rhône belong to this department.

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

There are six government roads, having an aggregate length of 192 miles, of which nearly three-fourths are in repair, the rest out of repair or unfinished. There are no canals in the department, having been abandoned on the right; the principal road is that from Paris by Moulins to Lyon; it passes through Roanne. The road from Roanne to Nimes crosses the south-east corner of the department, that from Lyon to Clermont passes through Feurs and Boën; and that from Lyon to Le Puy passes through St. Etienne. There is no rail communication from these towns.

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

The department is divided into three arrondissements, as follows:

<table>
<thead>
<tr>
<th>Arrondissement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roanne</td>
</tr>
<tr>
<td>Montbrison, Central</td>
</tr>
<tr>
<td>St. Etienne, S.E.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area in sq. miles</th>
<th>Population in 1831</th>
<th>Com. inhab.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roanne</td>
<td>668</td>
<td>121,817</td>
</tr>
<tr>
<td>Montbrison, Central</td>
<td>749</td>
<td>120,210</td>
</tr>
<tr>
<td>St. Etienne, S.E.</td>
<td>398</td>
<td>149,189</td>
</tr>
</tbody>
</table>

| 1835 | 391,216 | 412,497 | 318 |

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

In the arrondissement of Roanne are Roanne, on the Loire (population in 1831, 8890 town, 9260 whole commune; in 1836, 9910 commune) [Roanne]: Villeroys, near Roanne, on the same river; Perreux, also near Roanne, but not of the Loire; Charlieu (pop. 3123 town, 3412 whole commune), on the Sornin; Regny, Lay, St. Symphorien de Lay, and St. Just, on the Trambouze, or its branches; Néonde, on a small stream running into the Loire; St. German la Val, on the small river St. Just en Val; St. Just en Montlanc, and Rezon; on or near the Rezon; Aubière, Changy, Crozet, and La Pacaudière, on or near the Tessone. These are almost all small places. Perreux is famous for its wines. St. Symphorien de Lay (pop. 2991) is a considerable cotton manufacturer; the town, which is walled, does not contain much above a fourth of the population of the commune. La Pacaudière is a tolerably pleasant town of 600 or 700 inhabitants. St. Just en Chevalot is on the slope of N 2.
a hill: it has about 1000 inhabitants, who make hats and trade in the wood grown in the neighbourhood.

In the arrondissement of Montbrison, which is the capital of the department, on the Vizery, a small feeder of the Loire; Moutant and Chaudieu, both near Montbrison; L'Hôpital and Boine, on the Loiron; St. Marcellin and Sury-le-Comtal, on or near the Maire; St. Bonnet-le-Châtel, near the town; Robaut and Feurs, on or near the Loire; Panissière, near the Loire; and Chasselay and Galnier, or St. Galnier, near the Coise or Croize.

Montbrison, built in the twelfth century, was the capital of the district of Forez. The town is commanded by a picturesque cap of the Loire, from where the town can be seen. The townsmen manufacture some lines of different fineness. There are a small public library, an agricultural society, a botanical garden, and the different public offices necessary in a departmental capital. There are public baths and brothels, and a good hospital, which were known to the Romans. Some Roman antiquities have been discovered near the town, and among others the ruins of an amphitheatre.

Feurs was the Forum Segusianorum of the Romans, the name Segusianum given to the district of Forez. Many of the houses have cellars evidently of Roman construction. There are numerous vestiges of Roman monuments. Remains of aqueducts extend for more than a mile from the town. The traces of the ancient wall are discernible, and there are remains of the place. There is an ancient cromlech near the town. St. Galmier (pop. 1800 town, 2656 whole commune) has some manufactures of wax for use in churches: near the town are some mineral waters. Both has a population of 1500 people; there is a paper mill, and some trade is carried on in the corn, wine, and wood of the surrounding country. L'Hôpital has about 1000 inhabitants.

In the arrondissement of St. Etienne are St. Etienne, on the Sartine, 8358 inhabitants; Brézé (formerly Le St. S.), Bourg Argental, on the Durance; St. Sauveur and St. Julien, in the neighbourhood of Bourg Argental; Le Chambon and Firminy, on a small feeder of the Loire; St. Genest, on another small feeder of the same river; Chauresse, near the Loire on the south side; St. Chamond and Rive de Gier, on the Gier; Chagnon, Romain, and La Fouillouse.

At Bourg Argental (pop. 1734 town, 2502 whole commune) grapes and some other silk fabrics are made from the silk produced in the canton of Pulissun near the Rhône, where the mulberry tree is cultivated on a large scale. At Le Chambon (pop.1600) coal-mines are worked, and charcoal is used in manufactures. Firminy (pop. 2439 town, 3779 whole commune) produces the same manufactures as Le Chambon. St. Chamond (pop. 7475) is situated in a hollow, the sides of which are adorned by orchards, woods, and vineyards. Several of the houses are handsome, and have pleasant gardens, and near the town there are public baths and a pleasant public walk. Some vestiges of Roman antiquities have been found near the town. The inhabitants are engaged in throwing silk and weaving ribbons, in working coal-mines, and in the manufacture of nails, as well as cotton and flax, and the coasting trade of the Loire. The soil and aspect of these various establishments blacken the whole place, and render it always dirty. There is a basin or reservoir of the canal, which communicates between this town and Givors on the Rhône. Lyon is supplied with coal from this neighbourhood. Some of the coal strata in this arrondissement have been in a state of combustion for several centuries. Murate of ammonia is procured where this combustion is going on.

The population of the above towns, with other places, as follows: Bourg Argental, 2502; Le Chambon, 1600; Firminy, 3779; St. Chamond, 7475; and the whole commune of St. Chamond, 7475; and the commune of Le Chambon, 1600; and the commune of Firminy, 3779.

The chief branches of industry in the department have been noticed above. They depend almost entirely on the abundant supply of fuel furnished by the coal-mines of the department. In addition to those already mentioned, the manufacture of silk, in which there is an extensive trade, both in silk twist, and cotton and woolen fabrics, may be noticed.

The department of Loire forms, with that of Rhône, the archiepiscopal diocese of Lyon and Vienne. It is in the jurisdiction of the Cour Royale and the Superior Court of the department. It is included also in the seventeenth military division, the head-quarters of which are at Lyon. It sends five members to the Chamber of Deputies.

The state of education in this department is backward. In the military census of 1831, only 29 of 30,000 young men examined could read and write; the average number in all France being about 39 in every 100.

This department comprehends the ancient territory of the Segusians, with portions of some of the adjacent states: in the south-eastward lay the province of Lugdunensis Prima. Some Roman towns were included within it, as Forum Segusianorum, Pierre-Bénédict; Rodunum, Roanne; Aquae Segesta, perhaps Aizilum, a village on the bank of the Loire; and Carclocs, a town of ancient foundation, with the same extent. The townships of Forez and portions of Le Beaujolais and Lyonnais proper, all subdivisions of the province of Lyonnais. At the commencement of the Revolution the departments of Rhône and Loire constituted but one, under the title of Rhône et Loire, but they were subsequently divided. The department of Loire, extending from the north of the department of Montbrison to the south of the department of Montbrison, has a length of about 60 miles, and a breadth of about 35 miles. It is divided into two sections: the eastern, containing the cities of Lyon and Vienne, and the western, containing the towns of Charles-de-Fonse, Chaux, and Clermont. The department is divided into three regions: the eastern, containing the cities of Lyon and Vienne; the middle, containing the towns of Charles-de-Fonse, Chaux, and Clermont; and the western, containing the towns of Vichy and Mirepoix.

The department is divided into three regions: the eastern, containing the cities of Lyon and Vienne; the middle, containing the towns of Charles-de-Fonse, Chaux, and Clermont; and the western, containing the towns of Vichy and Mirepoix.

The population of the above towns, with other places, as follows: Lyon, 39,000; Vienne, 10,000; Charles-de-Fonse, 3306, or little more than one per cent, and giving about 153 inhabitants to a square mile, which is rather under the average density of the population in France: but considerably above that of Northumberland, with which country we are now to compare the population of the department.

The capital, Lyon, is on the left bank of the Loire, in 45° 2' N. lat. and 5° 32' E., 271 miles south west by west of Paris in a direct line, or 304 miles by the road through Aix, Moulins, and Clermont. The department is divided into three regions: the eastern, containing the cities of Lyon and Vienne; the middle, containing the towns of Charles-de-Fonse, Chaux, and Clermont; and the western, containing the towns of Vichy and Mirepoix.

The department is almost entirely mountainous, at least hilly. The chain of the Cévennes passes along the eastern boundary; the mountains of La Margeride, which unite the Cévennes to the central group of Auvergne, also pass along the south-western boundary; and a branch of the Cévennes also separates the mountainous districts of the department from Pradelles to La Chaisse. Nearly the whole of the department is occupied by these mountains, which are of the type that approaches to a mountainous region. The range of the Cévennes is on the north side of the department, where the valleys of the Loire and the Allier extend to some breadth. The mountains consist for the most part of granite and the other primitive rocks, mingled with basalt and rhyolite. The rocks of the Cévennes are very hard, and the level of the Allier is occupied by the superstratified strata. The mountains are in many places of picturesque form. Mont Mézenc, or Mézence, is a colossal mountain of granite, rising more than 6000 feet above the surface of the sea. The mountains of the Cévennes are of great importance in the region of the Allier, and the level of the sea. This mountain, which is formed of basalt and granite, extends to the principal range of the Cévennes, presenting some very magnificent ranges of basaltic columns. In the same line as
Mont Taras, Les Infernels, Mont Caou, or Mont Chaud, and others; all mountains of similar volcanic origin and shape. Taras has an elevation of 4110 feet above the level of the sea. The inmates of the volcanic mountains, except in a state of fusion from these or other mountains appear to have interrupted in several places the course of the Loire and the Allier, and obliged these streams to work out a new channel. Many fluvial caverns, through which the channels of the rivers penetrate through the volcanic rocks.

The names of several of extinct volcanoes appear to have had a Roman origin. Taras, or Tartarou, embodies the Latin Tararatus; and Les Infernels, or Infernus, the Latin infernus. The arched or arching rock columns in the department are those of St. Arains d’Allier near Langgeac on the Allier; Fare near Pradelles; and Espally Polignac, and others, near Le Puy, in the valley of the Loire.

The mineral treasures are coal, lead, and antimony; granite, serpentine, statuary and marble; excellent freestone for building, sandstone for mill-stones, and granite. The quantity of coal produced in 1835 was 21,883 tons; it is the eighth of the departments in respect of its production. The chief coal-plats are at Frugères.

The principal rivers are the Loire and the Allier, which enter the department on the south, the Loire from the department of Ardèche, the Allier from that of Lozère, in which departments they respectively have their rise on each side of the department. The Loire separates the central mountain-range from that of the Cévennes; and is very narrow, except in the northern part of the department. The river flows by or near Langgeac, Brioude, and Azon; its chief tributaries are the Chassy, an immense cube (14 miles in circumference), the Ance, the Senouire, and the Alagon. They are in the mountains several small lakes, or rather ponds.

In the official returns the Allier is stated to be navigable for vessels of 300 tons. In the department: probably from Brioude, where many boats are kept. As other authorities the commencement of the navigation is marked as being a little above Vichy (Allier), about sixty miles lower down, it is probable that in this upper part of its course boats can only descend the stream, not ascend it. There is no other inland navigation.

There are six Routes Royales, or government roads, in the department, having an aggregate length of 181 miles; of which (1st Jan. 1837) 123 were in repair, 22 out of repair, and 36 uninhabited. Some old castle towers, such as those at Clermont and St. Flour at Narbonne and Perpignan, and so into Spain: this just passes through the north-western corner of the department, through the little town of Lempte, on the Alagon. From Lempé a road branches off to the town of Ambert and other towns in the department of Puy de Dôme, to Le Voult (Arddche) and other towns on the Rhône, to Pradelles and to Yssengueaux. From Pradelles are roads to Mende (Lozère) on the one hand, and on the other to Aubusson, Privas, and Vivières (Arddche); and from Yssengueaux are roads to St. Etienne, (Loire), and to Annecy (Arddche). The Departmental Roads, twelve in number, have an aggregate length of about 250 miles, of which only about 100 miles are in repair. There are more than 600 miles of rural roads. The department has an aggregate length of more than 3700 miles.

It is probable that the lowest part of the department is nearly 1000 feet above the sea level; and the summits of the highest mountains exceed 5000 feet. The climate is too cold to admit the growth of any but the hardiest of the few more sheltered spots, as in the bottom in which the town of Le Puy stands; and there are some parts where it is too cold to admit the growth even of the so-called "sand" potatoes. There are three hundred and forty-six vineyards, occupying 14,000 to 14,000 acres, but the growth of wine is inadequate to the supply of the department.

There are several spots, such as those near the town of Le Puy, where the amount of meadow land is considerable; and the heaths or commons and open pastures occupy nearly one-fifth of the surface. The breeding of cattle, and still more of sheep, is much attended to. There are about 17,150 sheep, and 51,181 sheep in the department. There are many bees kept; and in some spots silk-worms are reared. Chestnuts are grown in large quantity; some kinds of fruit are cultivated to a considerable extent. The lands occupy more than a seventh of the whole department.

The department is divided into three arrondissements, as follows:

<table>
<thead>
<tr>
<th>Arrondissement</th>
<th>Population in 1831</th>
<th>Population in 1836</th>
</tr>
</thead>
<tbody>
<tr>
<td>Le Puy, Central and S.</td>
<td>860</td>
<td>129,722</td>
</tr>
<tr>
<td>Yssengueaux, or Issengueaux, N.E.</td>
<td>463</td>
<td>81,664</td>
</tr>
<tr>
<td>Brioude, N.W.</td>
<td>608</td>
<td>80,692</td>
</tr>
</tbody>
</table>

In the arrondissement of Le Puy are the principal towns, in order of their population in 1836, 14,924 (commune) on the Borne, a feeder of the Loire, not far from that river; Alerge and St. Paulien (pop. 3017) near the Borne; Craponne (pop. 2274 town, 3828 whole commune) and Châteluz (pop. 1378 town, 1931 whole commune) on the Lignon, another feeder of the Loire; Montger (pop. 1833 town, 3420 whole commune), on the Gazeille, a small feeder of the Loire; Pradelles, on a small feeder of the Allier; and Sauques (pop. 1846 town, 3833 whole commune) on the Suesjols, another small feeder of the Allier.

Le Puy is described elsewhere. [Puy, L.]

The immediate neighbourhood of the city is remarkable for the picturesque forms of its volcanic rocks. That of Cornelle, which immediately commands the town, is of the form of a truncated conical hill; its height is 130 feet; it is an oblong square, three sides of which are precipitous, crowned with the ruins of an ancient castle; that of St. Michel is a lofty cone, above 300 feet high, having a church with a steeple of Senouire, so that it appears, on a distant view, like a vast obelisk; the ascent to the church is by a flight of two hundred and sixty steps in the side of the rock.

The rocks of Espally are in the same neighbourhood; they have been noticed already, in speaking of the geological character of the department. There are some remarkable caverns near Le Puy. At the base of the rock of St. Michel is an ancient building said to have been a temple of Diana; and on the face of that of Polignac is a coarsely sculptured head of Apollo. There are the ruins of an old castle, and that of the same name in the department of the Allier, a site elevated more than 2000 feet above the level of the sea. Pradelles is yet higher: its site, which consists partly of granite, partly of volcanic rocks, is 3721 feet above the level of the sea; it contains about 1200 to 1500 inhabitants. In the arrondissement, and Le Chade are, near the site of the same river. Brioude and Vieille Brioude are described elsewhere. [Brioude] Antimony, mill
stones, and whistles are quarried in the neighbourhood of Langon. Lempde is in a fertile district; it has a population of about 1000: there is a bridge over the Aillacom. Excellent coal is dug in the neighbourhood. At the village of Vezouze, on the Allier, many boats are built for the navigation of that high navigable river.

The manufactures of the department consist chiefly of throw-nails, silk, lace, paper, and woolen stuffs. skins for making wine or other liquors; bells for horses and mules, glass, and leather. The trade consists in the sale of the foregoing articles, also in the sale of hay, hemp, mule pelts, and deals. Three thousand individuals leave the department yearly to obtain employment in other departments as sawyers, embankers, chimney-sweepers, porters, &c.

This department constitutes the diocese of Le Puy, the bishopric of Nantes, and the diocese of the bishop of Bourges. It is in the jurisdiction of the Cour Royale of Riom, and in the circuit of the Académie Universitaire de Clermont Ferrand. It is in the nineteenth military division, the head-quarters of which are at Lyon. It returns three members to the Chamber of Deputies. There is a Protestant consistorial church.

In respect of education, it is one of the most backward of the French departments. Of the young men enrolled in the military service, from the year 1829 to the close of the war, not even one out of every five could read and write; being very little more than half the average number in France taken as a whole.

This department was the country of the Vellatis, a Celtic tribe whose chief town was Recesso, now St. Paulien near Le Puy; Romans it was called in Augustus Prima. It afterwards came into the hands of the Visigoths, then of the Franks, and in the middle ages formed part of the extensive dominions of the Counts of Toulouse, to whom it is probable that the bishops of Le Puy, who held the counties of Le Velay, were, from the time of its accession to the taints, the district was called. From the Counts of Toulouse the district came to the crown of France, under which it constituted part of Languedoc. The department comprises, besides Le Velay, some portions of the Vends, the district of Averignal, and the district of the department, of the duchy of Auvergne, in the province of Auvergne, and of the district of Forez in the Lyonnais.

LOIRE INFERIEURE, a maritime department of France, bounded on the north-west by the departments of Morbihan; on the north by that of Ille et Vilaine; on the north-east, for a little space, by that of Mayenne; on the east by that of Maine et Loire; on the south by that of Vendée; and on the west by the Atlantic ocean. It forms with the two last-mentioned departments, from east to west, the department of the Loire, a small stream that flows into the lake of Grand Lieu, 69 miles. The area of the department is estimated at 2639 square miles, being rather greater than that of the English county of Cambridge; population, 470,093; in 1836 it was 470,768, showing an increase in five years of only 675, or about one-seventh per cent, and giving 178 inhabitants to a square mile. In area, in population, and in density of population it is considerably above the average of France; but in the last two particulars it is inferior to the English county with which we have compared it. Nantes, the chief town, is on the north bank of the Loire, at the junction of the Erdre and the Oudon; 47° 13' N. lat. and 1° 33' W. long. - 206 miles west-south-west of Paris in a direct line, 243 by the road through Versailles, Chartres, Le Mans, and Angers.

The coast of this department presents a broken and irregular outline. It commences at the bottom of the little bay of the mouth of the estuary of the Vilaine, where is the boundary between the departments of the Vends and the department of Loire Inferieure meets the ocean. This coast-line then forms the headland of Poitou de Piriac and Pointe de Croisic, with the intervening bay or headland of Pembron, and Poitou. Under the latter it is a long and shallow bay between the villages of le Pouliguen and St. Sebastien, at the mouth of the Loire, which is about seven miles wide. From the Pointe de Cheveche, which is on the south side of the mouth of the Loire, the coast forms the bay of Bourgneuf, at the bottom of which, at the mouth of the little river Falleron, the boundary of the departments of Loire Inferieure and Vendée meets the ocean. Belle Ile, opposite the Pointe de Piriac, belongs to the department of Morbihan; and Ile de Bon and Noirmoutier, of which the former is in the bay of Bourgneuf, and the second off the entrance of it, belong to the department of Vendée. The town of Nantes is on the banks of the Erdre; a bastion and headland is made, at other times connected with the mainland by the sand. The whole length of the coast is nearly fifty miles: it is for the most part low and skirted by broad sands. The soil brought down by the Loire and other rivers is carrying the coast out to sea. The coast is in the hands of the state, and the maritime facilities of the department, the wide estuary of the Loire, by which large vessels can get up to Nantes, must be taken into the account. There are considerable salt marshes along the coast.

The department is generally level, especially in the northern, western, and southern parts. In the north-eastern and eastern parts, the high land, which separates the basin of the Loire from that of the Vilaine, extends to the upper part of the river Erdre. The country slopes gently towards the west. The Loire has a full course through this department of about 100 feet in every seventy miles, of which fall more than 80 feet are below Nantes.

The department is occupied chiefly by the coal-mines and the subjacent strata, covered in some places by alluvial deposits. There are some strata of good coal on the banks of the Loire and the Erdre; the principal coal-works are between Ancenis and Ingrandes, and at Nort. In respect to the iron-works, the rich iron-stone of the department is that of Haute Loire, and is the ninth department in France. The quantity raised in 1835 was 21,742 tons. Peat is dug near the mouth of the Loire, on the north bank. Iron-ore is tolerably abundant; and a tin-mine is wrought at Princ, near the mouth of the Erdre. The Loire and the Erdre are greyish yellow, and limestones are quarried in different places. The loadstone is found on the north bank of the Loire, near the mouth; and crystals of quartz, from which the Alene's diamonds are made, mica, felspar, kaolin or porcelain earth, are also found. In the department of the Erdre, there are considerable salt-works in the marshes on the coast. The most important river is the Loire, which touches the border of the department at Ingrandes (Maine-et-Loire), and forms for about 20 miles the boundary between this department and that of Maine-et-Loire. Its remaining course, which is about 50 miles in length, is within the boundary of this department. The bed of the Loire is in this part full of small islands, which line its channel. It is navigable throughout its course, but on the left bank large vessels can get up to Nantes, where there is a bridge.

The Vilaine forms, for about 20 miles between Langeais and Rieux, the north-western boundary of the department, which it separates from those of Ille et Vilaine and Morbihan. It is navigable for small vessels, or, rather, for sail. The Falleron, a small stream not navigable, forms for about eight miles the southern boundary of the department.

The other rivers are feeder either of the Loire or of the Vilaine. The Evre joins the Loire at Oudon; the Erdre, 50 miles long, at Nantes; and the Oudon and Nantes above St. Nazaire; all on the north bank. The Erdre, the largest of the three, rises in the department of Maine et Loire, near the town of Can, flows westward into the delta of Loire Inferieure, and turning southward about the little bay of Nort, joins the Erdre at the hold where it expands into a long lake of about one mile and a half broad, and six or seven miles long. The navigable part of the canal from Nantes to Brest it consists of 76 miles: about 40 miles from the junction of the Erdre with the Loire. The Erdre, the Loire, and the Vilaine of Maine et Loire, and forms the boundary of the two departments till its junction with the Loire: the Sèvre Nantaise joins the Loire at Pont Roussea against Nantes; at 10 miles from the mouth of the Vilaine. Just above St. Nazaire, and Painbeau: all these join the Loire on the south bank. The whole course of the Sèvre Nantaise is about 65 miles one-third of which is in this department or upon the border: the navigation commences at the village of Mon- tagnac, about 10 miles above the Town Loire. The Arcbeneau is the outlet of the lake of Grand Lieu, a considerable sheet of water, approximating in form to a square with a side of four or five miles. Its area is estimated at 17,400 or 18,000 acres. It receives the Bou Auguste and Loire, and on the
It is subdivided into 45 cantons, or districts under a justices of the peace.

In the arrondissement of Nantes are—Nantes, at the junction of the Loire and the Erdre; Pont Rousseau, a suburb of Nantes, on the south bank of the Loire; Clisson, on the Sèvre Nantaise; Valeil (population 3067) and Lorroux-Pontcharra (pop. 4091), between the Sèvre and the Loire; Villiers-le-Bel (pop. 3451), on the Loire; Le Plessis (pop. 3213) on the Logne, St. Philibert (pop. 3200) on the Boulogne, and Machecoul (pop. 3665) on the Palléron. Nantes had, in 1831, a population of 77,992 for the town, or 87,191 for the whole commune. In 1836 it was reduced to 74,836 for the commune. [Nantes.] Clisson has the remains of a castle in which the celebrated Olivier de Clisson, constable of France, was born: there is a fine view from these ruins. The town is at the junction of the Sèvre and the Maine; the townsman (pop. 1850 town, 2439 whole commune) is a cotton and woolen manufacture and some linens. Near St. Philibert, on an island in the lake of Grand Lieu, is a Druidical monument; and not far from the adjacent shore of the lake another. The inhabitants of the neighbourhood have a reputation that the lake which extends by a terrible convulsion, in which a town called Herbadilla was swallowed up.

In the arrondissement of Ancenis are Ancenis, Oudon, and Varades (pop. 3306), in the Loire. Ancenis had, in 1831, a population of 3263 for the town, or 3749 for the whole commune. It had during the 19th century a population of only one village: at a rising ground, on the north bank of the Loire, commanding the adjacent valley of that river. The ruins of an old castle crown the neighbouring eminence of La Madeleine. There are important coal-works at Montrelais, in this neighbourhood. They employed many years since 300 men.

In the arrondissement of Châteaubriand are Châteaubriand, or Châteaubriant, on the Cher; St. Julien de Druyes, on the Loire, and Nort-sur-Erdre; Châteaubriand had, in 1831, a population of 3027 for the town, or 3709 for the whole commune; in 1836 it had decreased to 3634 for the commune. The town is of antiquated appearance, and is commanded by the ruins of an old castle, the principal fort of which was destroyed by order of the line of the ramparts. The townsmen manufacture "sabots," or wooden shoes, serges, tiles, and bricks; iron is procured in the neighbourhood. This place is noted for conserve of angeliac and other confectionery. Several government and private coal-roads converge here. Nort carries on some trade with Nantes, in coal from the neighbouring mines, wool for building and for fuel, and iron. At the village of Mellerais, between Châteaubriand and Nort, is a convent, now belonging to the monks of La Trappe; it was formerly the monastery of Pontcharra. The commune has two châteaux, and the population of the commune consists in 1819 of more than a hundred individuals, partly French and partly English. The English members had joined the community in their own country, where it was settled for some time. At Derval in this arrondissement are some Druidical stones. There was formerly a strong castle at this village.

In the arrondissement of Paimboeuf are Paimboeuf and Le Pellerin, on the south bank of the Loire; Port St. Pére, on the Acheron, Pontlieue on the Saône; and Bourgneuf on the sea; and Machecoul. Paimboeuf is situated in a low marshy flat; it consists of one main street, well built, with a quay along the bank of the Loire. It was, at the commencement of the last century, a hamlet of fishermen; but in 1800 it was a town of 5000 souls. Considering it desirable to have a station lower down the river, where larger vessels might land or take in part of their equipment, Paimboeuf was chosen; and by the middle of the last century it had become, according to Exposition nationale du 18,000 persons. Although it has since been constituted a town, and made the capital of an arrondissement, it seems to have declined; for the population, in 1836, was only 3973. Perhaps however, the Exposition is incorrect. There is a ship-building yard in the town, in which frigates have sometimes been built. Large vessels commonly and smaller ones frequently discharge part of their cargoes at Paimboeuf, from whence they are
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forwarded to Nantes in small. Bourgneuf (pop. estimated at about 2000), gives name to the bay at the bottom of which it is situated, and in which the sand and mud are gradually accumulating; the former part of Bourgneuf is now dry, except at high-water. A great deal of salt is made along the shore of the bay. Macechouël (pop. 3665) was formerly capital of the duchy of Rets, comprehending all (or nearly all) that part of the department which is south of that city. In the arrondissement of Savennay are Savennay, on a little brook running into the Loire; Couvron (pop. 4053), Donges, and St. Nazaire, on the north bank of the Loire; Guérande and Le Croisic (pop. 2200 town, 2900 whole commune) in the Arrondissement of the Loire; Pontchâteau (pop. 3090) on the near coast, and the island of the Meun or Brévi ; Blain (pop. 4899), on the Issac; and Herbigac. Savennay had, in 1836, a population of 2079 for the town. There are salt-works in the marshes near the town, and the townsman carry on considerable trade in cattle. At St. Nazaire pop. 3560 is a singular monument, probably Druidical. Loadstones are found, and peat is dug in the neighbourhood of this town. Guérande (pop. 2041 town, 8190 whole commune) is more populous, wealthy, and commercial than Savennay: there are salt-works here. Arzéchâteau (pop. 3200) is a large quantity of wash-leather is manufactured. Blain is described elsewhere. [BLAIN.]

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

The manufacturing and commercial activity of this department is considerable, as forming one of the numerose and great departments of France. There are iron-works. Porcelain, glass, earthenware, pottery, and tiles; bed-ticking and serge in considerable quantity; cotton goods, leather, hats, rope, paper, coals, brushes, brandy, and articles of furniture are made. In Pontchâteau, the merchant service and for the navy, except ships of the line, is carried on; and the cod, herring, and coast fisheries employ many hands. Trade is carried on from the ports of Nantes and Painmbéuf with all parts of the world; and the navigation of the Loire and its tributaries affords considerable facilities for inland trade.

This department forms the diocese of Nantes, the bishop of which is a suffragan of the archbishop of Tours. It is in the jurisdiction of the Cour Royale, and the circuit of the Academy, University of Nantes is included in the twelfth military division, the head-quarters of which are at Nantes. It returns seven members to the chamber of deputies.

In respect of education this department partakes of the backwardness which characterises the whole of Bretagne. Of the young men enrolled in the military census of 1828-29, only twenty-four in every hundred could read and write; the average of France was above thirty-nine in every hundred.

This department constituted, on the discovery of the Nannites, a province; its territory, that of Loiret, extended from Strasbourg; Nantes, St. Malo, and that of Loiret, was included in the department of Loiret, though a branch of the French department of Loiret, branching from the Armorican mountains, entered this department on the north-west side, and advance to meet the ranges of hills just described. They are separated only by the intervening valley of the Vernon, some maps represent the two as forming one continuous range. With the exception of these low hills the surface is tolerably level.

The greater part of the department is occupied by the swamps and bogs which the streams and tributaries of the Loire have accumulated to a considerable extent. These occupy the valley of the Loire for a short distance on each side of the river; and extend over all the counties northward of the Loire and westward of the Loing. The districts east of the Loing and south of the Loire are occupied by the flats which its tributaries. The hills described at the entrance to this section, one of the most remarkable of the French department of Loiret, is the area of the department may be estimated at about 80 miles. Several small streams join the Loire on each side. The Loire, though it gives name to the department, is scarcely navigable. When the river would supply such an abundance of water as to render it navigable for two miles and a half. It is never entirely free from

The other rivers belong to the system of the Seine, the basin of which the northern part of the department included. The Loing, a tributary of the Seine, rises in the department of Yonne, enters this department on the east side, and flows northward by Montargis into the department of Seine et Marne; of its whole course, which may be estimated at more than 70 miles, nearly 30 miles are in the department. The Aveiron and the Quanne tributaries of the Loing, have their source in the department of Yonne, but join the Loing in this department, to which about a third of the course of the Quanne, the larger of the two, belongs.

The canal of Orléans begins in the Loire, a little above that city, and runs north-east to the valley of the Loing, a feeder of the Loing, along which it proceeds until it reaches the town of Montargis, where the Loing and the canal of this canal may be estimated at 45 miles. The eastern part of Briare commences in the Loire at Briare, and runs northward, but by a circuitous course along the valley of the Loing, in the first instance, to the right, then on the left, next to the right, then to the left, then on the right, and finally to the left, the canal may be estimated at nearly 35 miles. It crosses a projecting portion of the department of Yonne; otherwise it belongs entirely to the department of Loiret. The canal of the Laing commences at Montargis, and communicates with the Laing by means of two canals, and follows the valley of the Loing, first on the right bank, then along the bed, then along the right bank, an
again along the bed of the river till its junction with the Seine at Moret. Of its whole length, which may be estimated at about 30 miles, about 11 to 12 belong to this department.

Of the lateral or navigable roads, there are six, viz. 158 in repair, 63 out of repair, and 4630 lost. A road runs from Paris to Orleans; it enters the department at Artenay, and runs direct to Orleans. From Orleans two roads run, one along the north bank of the Loire, the other along the south; they join at Borsay and Beaufort, to Blois (Loir et Cher), and Tours (Indre et Loire); the former, being the Loire by the bridge at Orleans, runs south to Châteauroux and Limoges. Another road from Orleans follows the north bank of the Loire to Gien and Briare, whose church, which had been destroyed by the English, and directed that his body should be buried there instead of at St. Denis. His request was complied with; and his tomb, which had been removed during the Revolution to Paris, was replaced in its former situation after the restoration of the Bourbons. It was at one time much resorted to, from the fame of the miracles which the Virgin was supposed to work there. At Olivet the great Duke of Guise was assassinated by his wife and her adherents, and by an assassin named X. The church, which had been destroyed by the English, and directed that his body should be buried there instead of at St. Denis. His request was complied with; and his tomb, which had been removed during the Revolution to Paris, was replaced in its former situation after the restoration of the Bourbons. It was at one time much resorted to, from the fame of the miracles which the Virgin was supposed to work there. At Olivet the great Duke of Guise was assassinated by his wife and her adherents, and by an assassin named X. Another road, from Orleans, passes through Montargis to Briare, where it unites with the road from Nevers to Nevers, and Montargis, which runs from the north end of the department to the south.

The number of canons, or districts under a justice of the peace, is considerable.

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In the arrondissement of Orleans are Orleans (pop. in 1831, 40,161; in 1836, 40,272) [Orléans]; Chatillon-sur-Loing (pop. 2564 town, 3160 whole commune); Meung (pop. 259 town, 4630 whole commune); and Beaupuy (pop. 259, 4630 whole commune), all on the north bank of the Loire; Jarguey, Messim, and Notre Dame de Clery, near or south the bank; Olivet on the Loire; Patay near the Conne, a feeder of the Loir; Neuvill near the source of the Gouf or Esnon, a feeder of the Seine; and the Loire de Clery near the Loire. This arrondissement has some manufactures of coarse woollens and linens. Meun, or Meung, has an ancient palace, formerly belonging to the bishops of Orleans. The inhabitants of P., No. 863.
pointed out the grave and overname in a legal combat the assassin of Aubry de Monodidier, his master. The incident was dramatized and performed with considerable success at the minor theatres of London and Paris, and under the title of 'The Dog of Montargis, or the Forest of Bondy.' The castle was pulled down about A.D. 1810. The streets of Montargis are broad and straight, but the houses are ill built. The only parish church, that of La Madeleine, in the middle of the town, was pulled down for its materials. Two large paper-mills forming one establishment about a mile from the town: in the same establishment woollen rags are reduced to the state of wool for the purpose of being again spun and woven. The manufacture of Montargis is considerably modified by the grassy banks of the Loing, of Orleans, and of Briare, which unite near the town; the chief articles of trade are cattle, corn, wine, wood, and wool. The exhaliations from these canals have caused a deterioration in the air of the place, so famous for its salubrity and healthfulness.

Montargis has a handsome theatre, one or two subordinate courts of justice, and an agricultural society. This town was besieged by the English, A.D. 1427, but the siege was raised, and the besieging force entirely defeated by Dunois, bastard of Orleans. It was however taken by the English in A.D. 1431, and retained by them till A.D. 1438. Montargis was the birth-place of the quietist Madame La Motte Guyon, whose poems were translated by Cowper, and of Manuel, procurer or attorney of the commune of Paris in the eighteenth century. Chantilly is the birth-place of Admiral Coligny. Chateau Renard was one of the strongholds of the Huguenots in the religious wars of the sixteenth century: its fortifications were on that account demolished by the French army in 1633. Local定制s and uses have been modified by a recognised custom of deciding all questions of disputed debts, in the absence of documentary evidence, by single combat between the debtor and creditor; if gentle,

Near the village of the lower Nogent are some remains of a Roman town or post, the name of which is unknown. The principal relic is a theatre, in the enclosure of a chateau, called Chenevier. The benches or seats are formed of small cubical stones, similar to those employed in the Roman theatres of Lutetia, and the neighborhood, and other antiquities have been discovered; and in the neighborhood of the theatre, in a thicket, are some remains supposed to be those of baths. These antiquities have been but little noticed by the French antiquaries.

The wool of Beauca and Sologne is made up in various fabrics: parchment and hosiery are manufactured; and sugar refining, vinegar-making, &c., the distillation of brandy are carried on to a considerable extent. Trade is carried on in the agrarian produce of the region, in brandy, earthenware, and moulds for the sugar-refiners.

The department constitutes the diocese of Orléans, the bishop of which is a suffragan of the archbishop of Paris. It is a part of the Circuits of the Académie Universitaire of Orléans: and in the first military division, the head-quarters of which are at Paris. It returns five members to the Chamber of Deputies.

In respect of education this department is rather above the average of France; the number of young men in the military census of 1829-29 who could read and write was forty-two in every hundred; the average of France being rather more than thirty-nine.

This department formerly constituted part of the territory of the Gallic nations of Celtic stock. In the Roman division of Gaul it was comprehended in Lugdunensis Quartia. Genabum, or Cenabum, the modern Orleans, was one of the chief trading stations of the Carnutes. This town took at a subsequent period the name of Autun; it was mentioned in the Itinerary of Antoninus by the name of Belica, which is probably the present village of Bouzi, on the left of the road from Orleans to Gien. A part of the territory of the Carnutes, another is included in the department: Briordurum, the modern Briare, was one of their towns. In the decline of the Roman Empire, this department was ravaged by the Huns; and afterwards divided between the Franks and the Visigoths, whose territory was frequently invaded by the Loing, which was alleviated into the hands of the Franks, and in the division of their territories among the sons of Clodomir, part of the kingdom of Orleans. It was included in the great Duchy of France united to the crown by Hugues Capet [Orléans.] It comprehends Orléans proper, with part of Châtillon and Dunois, subdivisions of the province of Orléans; also a part of the former province of Berris.

LOKMAN is represented in the Koran and by later Arab tradition as a celebrated philosopher, contemporary with David and Solomon, with whom he is said to have been acquainted. It has been assumed, an Arab of the antient tribe of Ad, or, according to another account, the king or chief of that tribe, and when his tribe perished by the Sel-ol-Arim [Arabia, vol. ii., p. 215] he was preserved on account of his wisdom and virtue. Other accounts, derived from Persian authorities, state that Lokman was an Abyssinian slave, and as noted for his personal deformity and ugliness, as for his wit and a peculiar talent for composing moral fictions and short apologies. He was considered to be the author of the well known and numerous fables in Arabic, which still exist under his name. There is some reason to suppose that Lokman and Jzop may be the same individual. This supposition is founded on the close correspondence of the traditional accounts of the person, character, and life of Lokman, with those of the Assian jurist and legislator, &c. In the fables of Lokman may, by a slight transposition, be derived from the Greek Alkmene. If Lokman is not altogether a fictitious person, his history seems to have been mixed up with that of Alkmene in the Arabic. This mixed character probably engrafted many incidents of his life on the few circumstances recorded by the classic writers respecting that of the Greek Fabulist. He may have been induced to do it by the apparently Assian origin of Alkmene, and, in order to avoid this, which was to a Greek seem forced derivation, and this assumed Assian origin might afterwards give rise to his dull buffooneries, his bodily defects, and Ethiopic extraction.

The fables of Lokman have by no means the character of antient and original Greek compositions. Many of them are strongly marked with an Oriental character. They bear a very striking resemblance to the Indian fables in the 'Panchatantra:' they allude to Asiatic manners and customs, and animals are mentioned in them, which are not found in Upper Asia, as monkeys, peacocks, &c. The fables of Lokman are the same peculiar features more or less frequent occur. Hence we may safely infer that both collections were originally derived from one common source, the Indian Parable literature, and it is probable that the book of Alkimene certainly came into the fabulous work attributed to Sempus (who was no other than the Sinbad of the 'Arabian Nights') and other works of that kind, which during the middle ages so powerfully attracted the attention of Europe.

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this, which is one of the most valuable of our pasture grasses, an account is given elsewhere. [Ryegrass. 2. L. tenuifolium, or darten, with elliptical awned spikelets, straight awns longer than the paleae, glumes the length of the spikelet, and an annual root. Of this species mention is made not only in all parts of Europe, but in Japan, New Holland, China, and Monte Video; it is remarkable as being the only well authenticated instance of a plant belonging to the order of Gramineae, in which narcotic or even deleterious properties have been found. The grains are said to produce intoxication in man, beasts, and birds, and to bring on fatal convulsions. According to Chrisitension, darten, when mixed with wine, produces an intermediate state, which is supposed to produce headache, giddiness, somnolency, delirium, convulsions, paralysis, and even death. A few years ago, the same author tells us, almost the whole of the inmates of the Sheffield workhouse were attacked with symptoms supposed to be produced by the oatmeal having been accidentally adulterated with Lollum; and a case is on record of a small farmer near Poitiers in France having killed himself by persevering in the use of dartel flour for making bread; his wife and servant, who discontinued to eat it, escaped, but were violently affected with vomiting and convulsions.

LOLLARDS, a religious sect which arose in Germany at the beginning of the fourteenth century, and differed in many points of doctrine from the church of Rome, more especially as regarded the mass, extreme unction, and atonement. The leading of these new followers, from Walter Lollard or Lollard, who was burnt alive for these doctrines at Cologne in 1322; but it would seem that Walter rather received his name from the sect, than that the sect story being told first, he appears to be the German lullen, lollen, or lullen, to sing, with the well-known termination of hard which is subjoined to so many German words; and it implied a person who was contumaciously praising God in sacred songs. Lollard subsequently became a term of reproach in England, it does not appear to conceal erroneous doctrines under the appearance of piety; and, in England, at the close of the fourteenth century, it was given to the followers of Wycliffe. Knighton, noticing the success of that reformer's doctrines (Thiylid. Scocil. p. 234); and saw the spirit of the cause in the guilt of the people of England in a few years became Lollards.

Mosheim, in his Ecclesiastical History (b. iii., part ii., ch. 2), observes, "Charles, duke of Burgundy, obtained a decree from Sixtus IV. in the year 1472, by which the Cellites or Lollhards were excommunicated among the religious orders, and were withdrawn even from the jurisdiction of the bishops; and Julius II., in the year 1506, conferred on them still greater privileges. Many societies (he adds) of their kind still exist at Cologne and in the cities of the Netherlands, and among the Londoners, and they retain their antient manner of life." This, of course, was previous to the French Revolution. (Furetiers, Dictionnaire Universel; Mosheim, Institutes of Ecclesiastical History, by Memoirs.)

LOMATICERAS. M. Bronn has given this name to a generic group embracing certain of the Linnaean Graptolithus [Graptolithus] instead of Prionon, which had been assigned to them by Nilson, but previously employed by Curver for a genus of fossil. Graptolithus scalarius and G. sagittarius, Linn., belong to this group, which as far as yet known is confined to the transition strata, in which it occurs in Norway, Bohemia, France, North Germany, Shropshire, &c., generally accompanying trilobites. (Bronn, Les Invertebrées, p. 363.)

LOMBARD, an ancient name in England for a banker. It was derived from the Langobardi, or Lombards, a company of Italian merchants, the great money-changers and usurers of the thirteenth century, who had established in England in 1244, and then took up their first residence in a street of the city, still called from them, Lombard Street.

Stowe, in his Survey of London, 4to, 1668, p. 202, says, "The Lombards and other merchants, strangers of diverse nations, assembling there twice every day. The meeting of which merchants and others there continued till the 22nd of December in the year 1568, on which day the said merchants and others concluded a new charter for their houses and places then newly built for that purpose in the warks of Cornhill, and was since by her majesty Queen Elizabeth named the Royal Exchange."

The extortions of the Lombard merchants in King Edward III.'s time became so great that he is stated to have seized upon their estates. They continued however to follow their trade; and when Henry VI. borrowed money of them, he had the customs mortgageed to them for security.

(Du Cange, Gloss. v. 'Langobardi'; Pennant's Hist. of Lanc. edit. 1790, p. 407; Nares's Glossary.)

LOMBARDIC ARCHITECTURE. This style, which has already been noticed at Sanlorenzo, was introduced in Lombardy architecture (vol. xi. p. 320), may claim to be considered the generic one which prevailed after the extinction of the Roman until the appearance of the Pointed or Gothic. It is evident from the evidence of the buildings which survive with them that it is difficult to fix with precision where it begins or where it terminates. Yet although the same elements, variously modified indeed, may be traced in our Saxon or Early Norman and Norman styles, and also in the contemporary styles of other countries, it is the Lombardic style that is most directly connected with the Italian architecture of the period alluded to, which, if it has something in common with those collateral styles, namely, what they borrowed from it, possesses also much that is sufficiently distinct, and that marks it as more or less a new style. In the Lombardic architecture, which is essentially in reality a terminus of the Roman architecture, the rudiments of a new style were beginning to develop themselves, owing to the almost general application of the arch, both as a constructive and ornamental feature, and also to the subordinate rank assigned to columns, which, besides being occasionally associated with the arch, were in the great majority of cases greatly diminished in size, that is, although they retained the same proportions as before, they were upon a comparatively diminutive scale in proportion to the edifice itself, the columns reproduced in the Lombardic architecture as a subordinate order. Consequently, though nominally no change had been made, in reality a great revolution in art had been effected. Notwithstanding therefore that we are accustomed to regard the Lombardic historically as altogether another style, and to bring it under a very different name from that which it supplanted than the latter does from the earlier Greco-Roman, it was only the other development of the system introduced during the decline of Roman architecture, and so far more consistent and homogeneous to the whole character of the building, was brought into existence in Lombardy and the Po valley by the Lombards, and to reconcile discordant features and conflicting principles, namely, small orders applied merely as decoration, and tiers of arches whose piers form the solid parts and supports of the structure. Whether it was the result of chance, caprice, or necessity, or of all three, the Lombardic style reconciled these two contradictory modes by combining together the arch and the column, and rendering the latter the essential support of the former. It is true, arches resting upon isolated columns of the Roman order, or of the transitional, in what are now the churches of Sta. Costanza and Santo Stefano Rotondo, at Rome; but in such cases, instead of springing immediately from the capitals of the column, the arches rest upon a piece of entablature forming a square block, and the capital, or the portion of the capital, copied in the interior of St. Martin's church, London. The discarding all appearance of entablature was undoubtedly an improvement, since such detached fragments of it served only to render the impropriety—superposing there to any—of placing arches upon columns all the more glaring, because indicating what ought to be a continuous horizontal member. At first the column itself was mostly tapering, not cylindrical as the slender detached ones met with in the Pointed style, and the arches, which had least room for deviation of the Corinthian order in contour and proportion. The capital itself however was larger in proportion to the rest of the column, thereby affording a greater surface or impost for the arches to rest upon; and also combining the appearance of the arch with that point with general lightness of appearance. The shaft was mostly plain, yet frequently highly ornamental, striated or carved in different ways, and sometimes twisted, either singly or with two stems twining spirally around each other. Columns furnished and decorated in the same manner occur in the cloisters of San Paolo and San Giovanni Laterano at Rome, and the capitals present quite as much variety, it seeming to have been the aim on such occasions to introduce as much diversity as possible, instead of so bringing the two together in a kind of compromise; a practice largely originating in making use of columns and fragments taken from other buildings: and afterwards retained as conducing to variety and richness.
Although the arches were, as frequently as not, quite plain, and without archivolt mouldings of any kind, the use of archivolts was by no means uncommon; sometimes consisting of merely a single moulding enclosing a plain border around the arch, at others divided into facées, and more or less enriched, as in the front of the cathedral of Pisa, in which building the arches describe more than a semicircle above the capitals of the columns, being prolonged downwards by a deep abacus, consisting in some places of two, in others of a single plain block resting immediately on the capital; a mode certainly preferable to that of placing a mere lump of entablature upon the column, and not ungraceful in itself, because it gives greater height and importance to the arches, which, being narrow, would else appear stumpy, depressed, and overloaded by the ornament around them. Similar blocks or abaci occur in the remains of Frederick Barbarossa's palace at Gelnhausen, where small heads or masks are introduced immediately above such abaci, so as to fill up the space there between the arches, and continue in some degree the vertical lines produced by the columns.

Among the other more prominent characteristics of this style, which are all that we can here touch upon, it should be noticed, that whether forming actual porticoes and galleries, or closed up and applied merely as decoration, these arches were generally small in proportion to the building itself, and instead of occupying the entire width of the front, or other elevation, were mostly inserted into distinct compartments of it, slightly recessed within the general face of the wall, so that the plain spaces between them assumed the appearance of buttresses, or, when narrow, of plain pilasters continued up to the cornice of the gable or roof, and cutting through whatever string-courses, or other horizontal mouldings (if there were any), divided the different stories or stages of the edifice. Such buttress-like surfaces—for buttresses they cannot properly be termed—were occasionally more or less enriched; sometimes so much so, as to produce vertical lines of ornament continued the entire height of the building, as in the front of St. Michele at Pavia—which city may be considered as the cradle of Lombardic architecture. When, as was frequently done, these surfaces were made wider at the angles of the front than elsewhere, they gave an expression of repose and of great solidity to it, serving as it were as a frame to the architectural decoration.

Among the other peculiarities of this style, that arising from small open galleries immediately beneath the cornice or roof is too remarkable to be overlooked, especially at these fronts, where the arches of such galleries follow the slope of the roof itself, the columns being successively elevated one above another on steps (so that the base of these supporting the centre arch are above the lower arches), as at San Michele, just mentioned; or else by placing the columns on the same horizontal line, and gradually increasing their height, as in the front of Pisa cathedral. To this may be added the very prevalent custom of making an upper cornice or border of very small interlacing arches, or rather of mouldings producing that appearance. Pinnacles are of rare occurrence, and when introduced have the look of being set on the part they rise above, being separated from it by horizontal mouldings; besides which they are generally low, and somewhat resemble pedestals. Pinacles of this description may be found surmounting pilaster-breaks, and cutting through either an horizontal cornice or the sloping ones of a gable, as in the front of the cathedral at Monza.

To render the above sketch account of this medieval Italian style more intelligible, some of its elements and leading forms are here indicated in a sketch exhibiting two different compositions of a façade; the half front marked A showing the columns of the arcade in the gable all of the same height, but placed on different levels; while that marked B shows the horizontal line, and consequently unequal in height. The side B also shows a variation in regard to the form of the gable, which, instead of extending the whole width of the front, takes a horizontal line directly above the pier at the angle. An enriched pilaster face is also introduced in this division of the cut, and, although rather peculiarly applied, is warranted by the authority of San Michele at Pavia. A very imperfect idea however is thus conveyed of the variety of features, combinations and proportions which the style itself admits.
Bonaparte had overthrown. Milan and Mantua, or Lombardy Proper, were constituted first as a republic dependent on France, and afterwards into a kingdom, which Napoleon made himself king in 1805. At the close of that year, in consequence of the campaign of Austerlitz, Napoleon retook from Austria the Venetian territories, which he annexed to Lombardy, styling it the Orizzonte of the kingdom of Italy, though this new kingdom did not comprise one-third of Italy. He added to it the state of Modena, the Legations, and lastly in 1808 the Papal Marches. The whole population of this kingdom was about six millions. In 1814, he separated the Lombard provinces from the other public works, and divided them from the Tyrol; farther to the north-west it is bounded by the main chain of the Rhätische Alps, from the Ortler Spitz to Monte Jorio, which divide it from the Grisons. From Monte Jorio, an irregular boundary line, not very defined, is marked, which extended from that of the Canton Ticino, which forms part of Switzerland. This boundary-line between the two states terminates on the eastern coast of the Lago Maggiore, a few miles north of the mouth of the river Tresa. From thence it runs southward, the Lago Maggiore being separated from the river Ticino, which issues from it, marking the western boundary of the Lombardo-Venetian kingdom, and divide it from the Savoyan territories. The course of the Po marks its southern boundary, and separates it from Parma, Modena, and the Papal States. The road over the Alps, the line of which is formed by the river Po, the branches of which are called Po d'Arino, and passes the place named Porto d'Oro, marks the limits between the Austrian and Papal territories. [FERRARA, LE CAZZONE DI].

The eastern boundary of the kingdom is formed by the Adriatic. Its limits to the north-east are fixed at the mouth of the river Ausa, west of the Isonzo. [FAUCI].

The Lombardo-Venetian kingdom is governed by a Vice-roy, who is generally an arch-duke of the Imperial Austrian family, and resides at Milan: it consists of two great administrative districts, the Roman and the Venetian. The Roman district comprises 8,820,000 of people, and 5,400,000 of the Lombard provinces; and 2, Provincie Venete, or government of Venice. These divisions acknowledge for their respective political heads the governors of Milan and Venice. Each division is subdivided into provinces called Delegazioni, at the head of which is a delegate; each province is divided into districts, and at the head of each district is a commissary. The districts are subdivided into communes, and each commune has a podestà for its local magistrate. The provinces are described under the following heads: Lombardo-Venetian Kingdom. 

The whole population of the kingdom consisted in 1832 of 4,279,000 persons, namely, 2,379,000 in the Lombard provinces, and 1,900,000 in the Venetian. [Serristori, Saggio Statistico dell'Italia, Vienna, 1833.] In 1837 the population of the Lombard provinces has been stated at 2,468,079. (Bollettino di Notizie Statistiche, published by Lampato, Milano, Maggio, 1839.) We have not seen any corresponding statement concerning the Venetian provinces later than 1832.

The governor of each of the two great divisions of Milan and Venice is advised and assisted by a central congregatio or provincial assembly, consisting of landholders and deputies from the royal towns, of which there are several in each province. Every province returns two landholders, one noble and the other not noble, as deputies, and every royal town returns one deputy. The respective communal councils select three or four other candidates, who, with the king, or king of Lombardy, chooses one as a deputy. The deputies are elected for six years. These congregations are not legislative assemblies, but boards of Administrators, who settle the proportion of the taxes, both general and local; they incumbrate the accounts of the various bridges, &c., and have also the superintendence of the charitable establishments of the country and their revenues. They can petition the sovereign concerning the want of money; and the resolutions are by a majority of votes. In every head town of them there is a provincial congregation consisting of eight, six, or four landowners, one-half noble, and the other half not noble, who concern themselves especially with the administration of the municipal and communal finances of their respective districts. The communes have their own councils, and a complete system of communal administration has been established. (Collection de Constitutions, Chartes, et Lois fondamentales des Peuples de l'Europe et de l'Amérique, Paris, Dayau, Ducroz et Cie.

The administration of the Lombardo-Venetian kingdom since the Restoration has paid peculiar attention to the material improvements of roads, bridges, canals, dykes, and other public works, which, in the course of fifteen years, from 1826 to 1834, the treasury has expended about 6,800,000 of millions for the Lombard provinces alone. This amount is independent of the sums expended by the communes for the communal or cross roads, which from 1814 to 1835 has amounted to 16,400,000 of millions, for a length of 3,994 miles of road. Thirty-five years have already seen three million or few communal roads in Lombardy deserving the name. Of the forty-two millions disbursed by the government treasury, five millions have been employed in constructing roads to the provinces of Mantua, about four millions in completing the great canal called Naviglio; a million and a half in making roads in the mountainous districts of Bergamo; about as much again for the great commercial road of the Splugen; two millions and a half for improving the grand canal of the Po; and three millions more for continuing it along the eastern bank of the lake of Como down to Lecco; 2,323,000 livres for completing the cathedral of Milan; another million for other improvements at Milan; 600,000 livres for the splendid bridge at Buffalora on the Ticino; 200,000 livres for a new casemate for the deaf and dumb; 270,000 livres for buildings accessory to the university of Pavia; 103,000 for a new college at Son- drio in the Valtellina; half a million for roads in the province of Pavia, for which the public works observe that nowhere perhaps on the continent is the maintenance of the roads and bridges more actively and usefully employed than in Lombardy. The whole of this part of Italy exhibits a solid material prosperity; it presents the fine side of its roads, the good buildings, and the well-kept gardens, and they are kept in repair with the greatest care. This government, economical and parsimonious in other respects, is great and magnificent in this. The excellent state of repair of the high roads of the Lombardo-Venetian kingdom is maintained at the annual expense of about 1,303,000 francs for 1518 Italian miles (60 to 1 of lat.) of length of road. (Valéry, Voyages en Italie, b. 2, c. xiv.)

The towns of Lombardy, Brescia, Bergamo, Como, and Milan above all, are being embellished, and are increasing in population. Venice is the only exception to this generally prosperous condition: but Venice had been silently decaying for a century before its fall; and Bonaparte, himself, by subverting national and local authority, caused the decay, and they are kept in repair with the greatest care. When Venice came into possession of Austria in 1814, there were no less than 44,000 individuals, nearly one-half of the population, who received at least partial national government relief from charity. The hospices and other houses for the old, the infirm, &c., were in a state of decay, and from 1814 to 1821 nearly four millions and a half of livres were spent in restoring and supporting these institutions. The recovery of Venice in the following ten years. By these means, about 6000 helpless individuals were relieved. The house of industry for the able-bodied poor had been neglected by the French administration, and the commune or municipality of
Venice was too poor to bear the extraordinary charges required in order to put that institution in a fit state to fulfill its object. The government took it in their own hands for some years, and spent 719,000 livres upon it, till the year 1821, when it was restored to the hands of the commune in a prosperous condition; but its success was not required by force of its own means and the produce of its labour of its inmates. Besides the cases thus relieved, there were still numerous families, many of whom had seen better days, but who had fallen into distress on some occasion. For these a "Commission of public beneficence" was established, consisting of the principal citizens, with the podestà and the patriarch at their head: the government began by contributing to its funds at the rate of 100,000 livres a year; it still does so, and the last report shows that now it has an income of about half a million of livres. It distributes relief, especially during winter and in seasons of dearth, to nearly 40,000 individuals annually. The payment of pensions to former public servants, and to several of the old patrician families (who lost their income by the fall of the republic), which had been interrupted under the French administration, was resumed by the Austrian government. Independent of these direct helps, the government undertook the repair of numerous palaces, churches, and other public buildings; and a thousand people (or more) were employed in this work, both to keep out the rain, as well as for the canals and bridges, and especially of the great marble dragon called the Musrazzi, upon which Venice depends for its safety from the waves of the Adriatic. Fifty-three thousand livres have been spent by the city on these objects in the last twenty years. By making Venice the head town of one-half of the kingdom, and the seat of a government, and of numerous offices and boards of administration, considerable advantage has accrued to the state; as the sales of this amount of property and the two millions of livres annually are expended in it. The archives of the Venetian republic, the richest collection perhaps of state documents existing, have been placed and arranged in the convent of the Frazi, where they fill more than half a room. The Ducal palace and its dependencies were in a splendid marble staircases and apartments adorned with paintings by Titian, Paul Veronese, Tintoretto, and other great masters, had been turned under the French administration into edifices and cellars of the state, and all its ornamen ts, paintings and sculptures. The Austrian administration has cleared and restored that monument of ancient Venetian greatness, and leaving it unencumbered for the adornment of the public, has purchased the palace Corner and other buildings, at the cost of nearly half a million of livres, for the accommodation of the offices and officers of the administration. Another half million has been devoted to the establishment of the Patriarchal Seminary, and an equal sum for the Academy of the Fine Arts. The whole of this has been made at government expense, by which regulation articles of foreign importation are consumed within the town without paying duty. All these cares and benefits have considerably alleviated the general distress which was observable in Venice for several years after the peace; travellers who did not search into the remote causes of it, attributed all to the fault of the Austrian government. The accounts of those tourists who visited Italy in the first years after the peace, when everything was still unhinged in consequence of the great political change, are now quite out of date. The commerce of Venice has revived; the arrivals in the port of Venice, which were 1,292 in 1832, amounted in 1837 to above 3,000 vessels, of the aggregate burden of 211,000 tons. Venice ranks now as one of the chief seaports of Italy, next to Genoa. The maritime commerce of Austria has increased wonderfully since the peace. Twenty years ago it had not above 300 merchant vessels; it has now above 3,000, about one half of which belong to Venice. (Bollettino Statistico di Milano, 1831-5; Statistica d' Italy, in copia, Milan, 1833; In the department of popular education the Austrian government has extended to the Lombardo-Venetian kingdom a central and uniform system which was already established in its German States, and which is one of the most complete in all Europe. The elementary schools were first opened in Lombardy in 1822, and ten years after there was hardly a commune without its school, which had been more extended and popular communes had two. The number of communes in the Lombard provinces was 2,234, and the elementary schools for boys were 2,248, and those for girls 1,221. Out of the aggregate number of the schools there are 71 upper schools consisting of four classes; the rest consist of two or three classes. The course of instruction is:—First class, spelling, grammar, arithmetic, needlework, writing, elementary instruction, the four rules of arithmetic, and fractions. The course in the first and second classes lasts three years. Second class, grammar, arithmetic. Third class, writing, geography, drawing. The four rules of arithmetic, and fractions. The courses in the first and second classes last three years. Fourth class, elementary instruction, history, geography, the principles of architecture, mechanics, grammar, drawing, natural history. A fifth class is established in the chief orals. The courses are:—First class, spelling, grammar, arithmetic, and fractions. Second class, spelling, instruction, orthography, the elements of grammar, the four rules of arithmetic, and fractions. Third class, sacred history, explanation of the gospels, etymology, Italian grammar, epistolary composition, the knowledge of weights and measures, and of currency. For each class a teacher is supplied for every 40 pupils. Corporal punishment is strictly forbidden. The tuition is gratuitous, the schools being supported from the communal fund. The schoolmasters have from 250 to 400 livres of fixed annual salary. A register is kept in each school; the boys are marked and verified on account of illness or other sufficient cause. In the province of Como there were 778 out of 1000; in that of Brescia 747; in that of Cremona 647; in that of Pavia 632; in Lodi 546; in Crema 466; in that of Mantua 513. The proportion of girls was as follows: Bergamo 909 of every 1000; Brescia 619; Sonza 427; Pavia 493; Lodi and Crema 352; Mantua 330; Milan 302; Cremona 210; Como 152. Of the Venetian provinces we have not seen recent reports since 1825, when the system had not had time to attain its full extent. There were then about 1400 schools, attended by 62,000 boys, being only one-fourth of the whole number of those schools. In the provinces in which arithmetic is taught, 477 copies, and verified on account of illness or other sufficient cause. The text-books used in these schools are: spelling-book for the lowest class, spelling-book and reading-book; little catechism; an historical compendium of the Old Testament; historical compendium of the New Testament; duties of subjects; elements of geometry; elements of arithmetic; introduction to geography, in two parts; introduction to Italian grammar; guide to composition; religious instruction for the two elementary classes; principles of arithmetic in four parts, for each of the four classes. These books are sold at a few cents each, and about 120,000 copies of them are distributed annually to the pupils. (Schiavi, Memoria Statistica sull' attuale Stato della educação in Italia, Roma, 1834; Bollettino Statistico di Milano, anno 1835, primo semestre, pp. 81, and 183.) In the upper elementary schools of the chief towns of those schools courses of methodical teaching for those who are intended for schoolmasters. About 500 pupils follow these courses annually. There are also in the towns and villages of Lombardy "school catechism, on Sunday and holiday schools, above 2000 in number, kept up by the inhabitants for the instruction of children from twelve years of age, or those below that age, who cannot pay for instruction. The pupils attend the daily elementary schools. In some of
these lessons are given in drawing applied to the arts. In Milan the Academy of the Fine Arts gives evening courses during the winter for those operatives who wish to learn ornamental, architectural, and plan-drawing, machinery, engineering, &c. There are also for the wealthier classes about 50 college convitti, or public boarding-schools, and 90 private ones, besides 600 private-daily schools. Infant-schools have also been established in late years in most towns and cities, with special respect to the education of the children of Holiday Schools in Lombardy, as in No. xix. of the Quarterly Journal of Education, July, 1853.)

From the upper elementary schools boys who intend to pursue a military career in the communications, or who wish to one in almost every town, and about 66 in the whole kingdom, with about 300 professors, and attended by between 7000 and 8000 students. The gymnasia course lasts six years, four of which are employed in the study of Latin and Greek grammar and poetry, the geography and history of the Austrian empire, and Roman antiquities. The other two years are engrossed by rhetoric and poetry, study of the classics, algebra, general geography, and history, antient and modern, and religious instruction. (Sacchi, Quadro Statistico dell' Istria e Lombardia, in the Milano Statistico di Milano, March, 1835; and also an article on 'Italian Education,' in No. vi. of the Quarterly Journal of Education, April, 1832.) Besides the gymnasium, there are 38 private institutions for youths, case private educated, of trustees, which they exercises an inspection over them. There are two general direzioni, or boards, at Milan and Venice, for the superintendence of all the establishments for secondary or grammar education, as such, as noted above, the education of young ladies there are 34 collegio femminili, mostly under the direction of the nuns of Santa Teresa, of Sales, of Santa Chiara, and other orders, which devote themselves to the education of youth, and which are the only convents or institutions of the kind. All other monastic institutions were suppressed long since under the French, and their property was sold. The Lombardo-Venetian kingdom is not only better supplied with elementary instruction than any other Italian kingdom, but a system of popular education has been established. With regard to 'secondary' or gymnasial education this kingdom is also better provided than any other Italian state, the continental dominions of the king of Sardinia alone excepted. 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Lombardy proper produces in abundance every thing that is necessary for the sustenance of its population; corn, wine, rice, fruits, cheese, and excellent meat. The two principal articles of exportation are:—1. silk, which is exported annually to the amount of eighty millions of Italian lire. In 1860, 2,630,000 ells of silk manufactures of the value of from twelve to fifteen millions of livres; 2. rice, of which the average annual produce is valued at about thirty millions of livres, one half of which is exported. The districts in which the rice is cultivated are the last provinces of Padua, Crema, Cremona, and part of that of Milan, as well as the provinces of Padua and Rovigo. The cultivation of rice, which requires the fields to be laid permanently under water for a certain period, has been considered by many as peculiarly suited to those districts, where the soil is particularly adapted to it. There are also large manufacturing districts, such as Crema, as well as in many other parts of the Venetian kingdom, where silk manufactures, and especially those of the town of Bergamo and Brescia. (Anni della Rissaga, Crema, 1833; and also an article, 'Le Rissaga del teritorio Cremano giustificatamente,' in the Bollettino Statistico di Milano, June, 1838.) The other articles which are chiefly exported, especially from Italy, are spices, which is erroneously called Parmigiano, and hemp, which is cultivated in the provinces of Padua, Venice, and Rovigo. Salt is imported from Istria, Parma, and Sicily.

The principal manufactures, besides those of silks already mentioned, and the manufacture of Venetian works in bronze, and hats, especially at Bassano, which are equal to those of Tuscany: there are also establishments for spinning cotton, and other similar works. Lombardy is essentially an agricultural country, and receives most of the manufactured goods which it uses from other parts of the Austrian monarchy. The bookselling and publishing trade, although subject to the censorship, is more flourishing at Milan than in all the rest of Italy put together. At Milan, and in a few other towns, new works are published annually throughout the kingdom. Expensive engravings, as well as lithographic prints, form a considerable branch of industry. The journals published in the Lombardo-Venetian kingdom amount to nearly forty; there are also more than one hundred municipal gazettes. In most of the head towns of the province, and the rest are scientific and literary journals, either monthly or quarterly. Milan and Venice have each an academy of the fine arts, and Milan has also a 'conservatorio,' or college for musical pupils. The public charitable establishments, hospitals, orphan and foundling asylums, houses of industry, Monti di Pietà, &c., in the whole kingdom are to the number of eighty-eight.

The taxes paid by the kingdom amount to about eighty-three million livres, or nearly three millions and a half yearly; and the sources of taxation have not remained for the most part the same as they were under the French administration, but the respective burthens of some of the taxes, such as the land-tax, the tax derived from the monopoly of salt and tobacco, the postages, &c., have been somewhat alleviated since the peace of Vienna. The other, however, abolished the tax which the French government had put on those who exercised the liberal professions, such as artists, literary men, physicians, &c. The expenditure of the public officers, and especially the magistrates and judges, are better paid now than they were under Napoleon's government. In the Lombard provinces alone, the stipends of the judges and pretors amount to 2,655,070 livres or francs annually, and under Napoleon they amounted to 1,540,325 livres only. The professors of the universities of Pavia and Padua have also had their salaries increased. We have already seen that the government treasury assists the communities in supporting and extending the system of popular education. The large sums spent annually by the treasury on works, roads, canals, dykes, bridges, and charitable institutions have also been mentioned above. The conservatory, or school of music, at Milan, under the French was supported by the tax laid on the licensed gambling-houses annexed to the theatres. The Austrian government has published a decree that it will pay out of its treasury 36,000 francs for the conservatory, and 240,000 as an encouragement to the theatres.

Making every allowance for the political aspirations and disappointed national feelings of many Italians, it may be said with safety, that the Lombardo-Venetian kingdom is in a thriving and progressive condition, and that it is the best administered country in Italy, excepting perhaps Tuscany.

The general amnesty published by the Austrian government, has not been exaggerated by all political offenders, has contributed to restore a feeling of satisfaction to the bosom of numerous families. Further investigation and discussion on the subject of the Austrian administration in Lombardy may be found in two articles of the Firenze Aretino, 'La Commentaire and Italian Liberale,' in No. Ixii., May, 1834; and Il'Italia e l'Europe,' in No. xxviii., December of the same year.

Lombardy and Lombard Cities. The name of Lombardy is derived from the Lombards, a branch of the Ostrogoths, who invaded Italy in the sixth century, and overthrew the Longobard* at a feast held in the court of the kins of Montserrat. The Lombards were divided into the numerous valleys which open into the north. A physical description of this fine region is given under Po.

The overthrow of the kingdom of the Longobards by Charlemagne did not destroy the political existence of that nation, but the Longobards, as a people, continued to possess their property, and their numerous and powerful nobility; they continued a nation and a kingdom, subject however to the monarchy of the Franks. At Pavia, which was then the capital of the country, the successors of Charlemagne were crowned with the iron crown of Lombards as kings of Italy, previous to their coronation at Rome as emperors of the West and kings of the Romans. The Longobards continued in force for the Longobard population, while the Longobards as a tribe were extinguished. In the reign of Charlemagne, they were called, living under the Roman law. The name of Lombardy was retained, but only for a part of the former dominions of the Longobards: the duchies of Spada, Fruli, Tuscany, and Benevento, although some of them are now the State of the Grand-duke of Tuscany, and the duchies of Spada, Fruli, and Benevento, although some of them are now the State of the Grand-duke of Tuscany, and

At the same time, that is to say, about the ninth century, the towns began to rebuild their walls, which had been razed by the barbarians, in order to defend themselves against the incursions of the Hungarians, Saracens, and Normans. The towns were in the name of the ducal system of curia, or municipalities, and the citizens elected their own magistrates. The distinction between the Longobard and Roman became gradually obliterated among the people: there were all Italians or Lombards together.

At the consecration of Charlemagne in 888, the crown of Italy was disputed for about seventy years among a succession of pretenders, Italians and Burgundians, until Otto I. of Saxony seized it with a firm hand, and was crowned at Rome by the pope, on the 26th of December, 962. He restored chiefly in Germany; they came now and then to Italy at the head of armies, when they generally pitched their tents and held their sovereign court in the plain of Roncaglia near Piacenza, whither all the great feudalists...
of Lombardy and other parts of Italy, and the magistrates of the towns, were summoned to pay their homage, and to listen to the sovereign’s decisions and decrees. But as the emperor’s return to Germany the great vassals retired to their castles, and the magistrates and bishops returned to their cities. Each town and district was in a manner independent of every other, all acknowledging allegiance to a distant sovereign.

The political system of most towns of North Italy in the tenth and eleventh centuries consisted of the nobles, feudal lords, and subfeudatories, at the head of whom were the respective archbishops and bishops of the principal cities, who constituted their council, and were consulted by them. The citizens elected their magistrates, called scabini, subject to the approval of the bishop. The emperors pointed to the sees, the old mode of election by the clergy and citizens. As time went on, they more slowly and gradually appropriating themselves to the pre-rogatives of the sovereign, and not wishing to attract attention to their encroachments.

Towards the middle of the eleventh century we find discord in Milan and other cities between the various classes of the population. The varsorii, or inferior nobles, of whom there were several gradations, owing to the extensive system of subfeudation, or tenure, rose in arms against the great nobles, at the head of whom stood the bishop of Milan. They seized them and drove them out of Milan, but being joined by the malecontents from the neighbouring towns, they appealed to the emperor Conrad, who came to Italy in 1036, and deposed and imprisoned the bishop. Heribert submitted and was restored to his see, but he was joyfully received by the clergy, the nobles, and the people, and in order to defend himself against the imperial forces he called to the arms of every district of the town, without distinction of classes. Till this time the use of arms had been a privilege of the nobles or militi. On this occasion Heribert introduced the carroccio, or cart drawn by oxen, in imitation of the ark of the Israelites, with the great banner of the city fixed upon it, which was drawn in the midst of the city, with the clergy and prelates, from a raised platform gave their directions during the fight. By degrees every city adopted the carroccio, which became a kind of palladium, and the emblem of popular independence. Thus it was that the episcopal government of Milan, in defence of its cities and its political liberty. In 1041 the plebeians orburgers rose against the whole class of nobles, owing to some insult offered by one of them to a common citizen. Lanzo, himself a noble, led the people; a battle was fought in the streets, and the nobles were obliged to leave with their families. The archbishop Heribert, who had taken no part in the quarrel, emigrated with the rest. The nobles, being joined by others, blockaded Milan, and reduced the citizens to famine, when after three years Lanzo managed to bring about an agreement, by which the citizens could not well do without them, for they formed the only cavalry; and their acquiescence with the world and their connexions with other states made them useful to the councils.

In 1059 began the long struggle at Milan and in the rest of Lombardy on account of the married clergy. The church of Milan had its peculiar liturgy and system of discipline, called Ambrosian from its great bishop St. Ambrose, and was almost wholly independent of Rome. According to this system the clerical orders were closed, and the clerical system of the Eastern church, and could continue to live with their wives, though an unmarried priest could not marry after his ordination. If a priest became a widower and married again, he was termed from extinguishing his functions. Several families in the world of St. Ambrose seemed to countenance this system, which existed for ages in other parts of the Western church, notwithstanding several councils had attempted to enforce celibacy among the clergy. At last the council of Pavia, a.d. 1021, in which pope Benedict VIII. presided, attended by the archbishop Heribert, decreed that married priests should separate from their wives and observe in future perpetual celibacy. But the archbishop did not strictly enforce this decree in his diocese, and things continued as before till long after his death (Giuliani, Storia di Milano, vol. iii.), when several families, among whom was a deacon, excited the people against the married clergy, and against the archbishop Guido, who favoured them; and great disorders followed. Hildebrand, afterwards Gregory VII., who directed the lion of Rome at the time, took part with the zealots, with the view of enforcing the decrees of Milan entirely to that of Rome. Pope Alexander II. undertook to enforce the decree of celibacy, and he sent for the person Erlembaldo as his legate to Milan, giving him a power interdicted at the same time a brief forbidding any one to bear the mark of a cleric. This was in the year 1063, and it revived the tumults in Milan. Erlembaldo, supported by a troop of factious persons, insulted the clergy and even drove them from the altar. The see of Milan was restored by a synod of 1076, to the great joy of the citizens. Gregory VII., for he had now become pope, seeing that force could not subdue Milan, began to weaken its metropolitan by detaching the suffragans from his jurisdiction, annexing Como to the patriarchate of Venice. Adrian IV., when elected pope in 1154, consecrated a cardinal, and Bobbio were detached from the jurisdiction of Milan at a later period. The great influence which Gregory acquired through the See of the Matilda, and his confirmation of the union of the see of Milan, whose archbishops became gradually dependent on Rome, received the pallium from the pope, and swore obedience to him. As a consequence of this, the clergy became subjected to the Roman discipline, and the regulation was enforced of not admiring any persons to orders except unmarried men. Nothing is said by the historians about those who were already married, but it appears that they were allowed to live and die in the orders of the Church. Verri, who wrote an account of the customs of Milan, in 1179, investigated this curious and obscure period of ecclesiastical history, which saw the extinction of the independence of the Milanese or Ambrosian church.

In the great contest of the investitures, Milan, Lodi, Cremona, and other cities went at first on the side of the nobility, who were mostly favourable to the emperor, but at last in the decline of the imperial authority they joined the Countess Matilda and her second husband Guisephi, with whom they formed an alliance. It was during this long struggle that the cities really established their independence, acknowledg ing no longer the imperial missi, or vicars. The citizens then began to elect a certain number of magistrates, whom they styled consuls, who administered justice and commanded the militia; they were chosen from three orders, namely, captains of the city, the chief burghers, and the peers. How the consuls were elected, how many there were, and how long they remained in office, is not ascertained; for the chronicles of those times do not enter into these particulars. They were elected at the same time mentioned. The rural noble inscribed themselves among the citizens, and came to reside, at least for part of the year, in the city, in order that they might participate in the political rights. A council of credenza, or trust, consisting of a certain number of burgesses, formed a town-council, which deliberated in secret. On important occasions the parliament, or general comitia of the people, was convoked by the sound of the great bell, to give their opinion by acclamation on some matter which had already passed the council of trust. The decisions were promulgated in the name of the 'popolo,' or commune, which meant the whole community. There was no distinction between the judicial and executive powers, nor...
any real legislature; and for this reason, that the right of making laws was still considered a prerogative of the kindred and populi, the owners of the magnates, or great feudal
atories, and by the judges, at the great diets convoked for the
purpose in the plain of Roncaglia. Laws and written con-
titutions were few in those times, and the consuls enforced the
customs and precedents. Italy, therefore, was divided into
principalities of great extent, which were called duchies in 1216, in a kind of code, and pub-
lished at Milan and other cities. The war of the investitures
being over, the cities continued to acknowledge, at least
notably, the emperor's sovereignty over Italy, his right of
exacting military service, of giving the heaviest treatises of feudal
tenure, of sending to the emperor or the vicar himself, who was
wholly independent of the magnates of the people, of demanding the 'foderum,' or
tribute for the maintenance of the emperor and his suite
whenever he came to Italy, and lastly of sending from time to
time his 'missa,' or vicars, who represented the person of the emperor.

The Lombard cities, having now secured their municipal
liberties, began to fight among themselves. Milan and
Pavia were rivals of old, and Cremona, which was the third
great city of Lombardy, was also jealous of Milan. But
beneath the arms of these two cities, and between Italy and
their neighbours, was a war which lasted nearly a century.

In 1117 the Milanese made war upon the people of Pavia, who
had been their most powerful neighbours since antiquity.
Their arms were not to be resisted, and the Milanese
rout the forces of the Pavia, and, after a brief 
siege, took the town. The Milanese occupied it for some
years, during which they carried out their usual
exactions, and the Pavia was left desolate and denuded of
its inhabitants.

In 1122 the Milanese made war upon the people of Pavia, who
had always been their greatest and most powerful neigh-
bours. They were not to be resisted, and the Milanese
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higher nobles or capitan, who, with the archbishop at their head, assembled in their own city, called 'Cremona in the nations.' Each of these councils had its consuls, who made edicts for those under their respective jurisdiction. In matters concerning the whole state, deputies from each class assembled in a general council, the numbers of which appeared to us in the time of the podesta. We have thus elected these deputies, their condition and qualifications, and the duration of their office, are not ascertained. The podesta summoned the general council upon important occasions. The two credenza however generally resolved themselves into two parties, the nobles and the popolani (or plebeians). The nobles of that epoch were strong by their connexions, their subfendars and dependents, forming altogether a numerous and compact body, the most warlike part of the population; they enriched themselves by the plundering of the cities that carried the brunt of the wars against Frederic Barbarossa. Their superior address, their acquaintance with foreign courts and councils, gave them great advantage; the archbishop and his dependents were on their side; and so in most cases was the podesta, as he also was a noble. But they were haughty and overbearing towards others, and quarrelsome among themselves; and the burghers on their part, as they became wealthier, would no longer brook their assumed superiority. The consequence was that the nobles were driven from Milan, and supported by their friends from Cremona and other places. Reggio, Bologna, and other cities were likewise distracted. Besides these internal feuds, there was the old rivalry among the towns, which revived after their united contest. The podesta, a masterful and magnificent man, assembled a notable list of these petty wars, which is given by Bossi and other historians, without any intelligible account of the origin of most of them, excites a feeling of indignation mixed with contempt; people were killed, property was destroyed, and families were made unhappy by these absurd feuds.

One half of the index of the fifteenth volume of Bossi's 'History of Italy,' which comprises the events of the thirteenth century, consists of such heads as these:—Wars of the Burghers and of Milan against wars of various Italian cities; other wars of the Italian cities; fresh contests between the Italian cities; peace made between several cities; wars and tumults in the cities; wars of the Italian cities (this head is repeated at least twenty times); wars of Lombardy; tumults of Brescia and Milan; tumults of Piacenza; wars in Lombardy and other parts of Italy; wars of Romagna, Genoa, Tuscany, &c. and all this, independent of the great struggle which was then carried on between the pope and Frederic II. and his son Manfred. (Bulgana and others.)

Such was the condition of the free Italian cities in the thirteenth century, and such the manner in which their citizens enjoyed that independence for which their fathers had bravely fought at Legnano; a contest of this kind, which lasted through the middle ages attempts to excise their sluggish propensity by observing that there were then no regular soldiers like ours, who have now to bear all the privations and dangers of war; military service was then a tax on duty, the pleasure and pastime of every citizen, to which he consecrated a few days every year; he fought in sight of his own walls; if he was wounded he was brought back to his own house; and if he died his loss was lamented by all his townsmen (Siennoni, Regnani, Toscanni, &c.); for they saw in every man a knight, that in all the quarrels of the wealthier citizens, first with the nobles, and afterwards with the lower classes, civil liberty was frequently violated, and personal rights and se

It is observed that a number of towns are mentioned as being of importance in the thirteenth century. We read of the glory and wealth of Milan and Florence, but we take no account of the depopulation and calamities of Lodi and of Pisa; it is the same with antiquity. We have thus aSketch of the cities, in which we are apt to overlook the numerous towns of Latium and of Sannio which were annihilated through her predominance. Several causes contributed to keep up the wealth of the great Lombard cities during the middle ages; the extraordinary and burdensome taxes on the burghers, in which they were unrivalled in Europe, and the practice of their citizens of lending money at high interest throughout Europe, from whence the name of Lombard became synonymous with that of banker as well as usurer. But how happy might it not have been if the burghers had little participation in their splendour, and the greatest sufferers in the continual wars between them were the unfortunate country-people, who in all these republics had no political rights, had no voice in these quarrels, but were in all cases the burghers' enemies, none the less because of this.

We find in the contest between the popes and Frederic II. the Lombard cities were divided: Milan, Brescia, Piacenza, and Modena were against the emperor; Cremona, Parma, Modena, Reggio, were for him. But his most effective ally was Eccelino da Romano, whom the Veronese had made prince of the people, and who employed his power in a holy cause to make himself master not only of Verona, but also of Vicenza and Padua, and all the Marches. In 1237 Frederic attacked the Milanese and their allies at Cortenova, near the river Oglio, and completely defeated them. Still the emperor was not satisfied with his victories, and pursued his advantage, and Milan was saved. A desultory war continued till his death. Meanwhile renewed affairs between the nobles and the burghers of Milan induced the latter, who were dissatisfied with the podesta for ousting the nobles, to have a direct democracy, and to make him director, or magistrare for themselves, as they had already a separate credenza and separate causes. They chose for this office Pagano della Torre, lord of Varesesia, a powerful patrician, who had been exiled in exile, and in the service of the emperor. He reconquered the city, and in the year 1252, after the defeat of Cortenova, and they styled him 'Protector of the people.' The nobles had now for their champion the archbishop Fra Leone da Deregno, a fanatical monk, who distinguished himself by his subserviency to the pope, and his zeal against the bayard, the asinello, and the podesta. But his death occasioned the fall of the podesta, and the victory of Pagano della Torre. The Milanese were commonly divided into three classes, those of the nobles, those of the podesta, and those of the burghers. Pagano della Torre was governor of Milan, and himself hemmed in by enemies on all sides, his own former friends Oberto Pelavicino of Cremona and Buoso di Dora, both Guidelines, having turned against him. He attempted a retreat, but was wounded and taken prisoner, and died of his wounds in the castle of Pavia. The exiled nobles of Milan still kept the field, and Martino della Torre, unable to reduce them for want of cavalry, engaged Pelavicino and his troops in the service of Milan, with the title of 'signor,' and some years after his retirement, his son Martino was chosen by the Milanese for their podesta Paolo da Soremasio. Martino however had the advantage, and expelled Soremasio. The nobles had then recourse to Eccelino da Romano, who ruled Vicenza and Verona, and had also taken Brescia. He advanced towards Milan with a splendid army, crossed the Po, and himself hemmed in by enemies on all sides, his own former friends Oberto Pelavicino of Cremona and Buoso di Dora, both Guidelines, having turned against him. He attempted a retreat, but was wounded and taken prisoner, and died of his wounds in the castle of Pavia. The exiled nobles of Milan still kept the field, and Martino della Torre, unable to reduce them for want of cavalry, engaged Pelavicino and his troops in the service of Milan, with the title of 'signor,' and some years after his retirement, his son Martino was chosen by the Milanese for their podesta Paolo da Soremasio. Martino however had the advantage, and expelled Soremasio. The nobles had then recourse to Eccelino da Romano, who ruled Vicenza and Verona, and had also taken Brescia. He advanced towards Milan with a splendid army, crossed the Po, and himself hemmed in by enemies on all sides, his own former friends Oberto Pelavicino of Cremona and Buoso di Dora, both Guidelines, having turned against him. He attempted a retreat, but was wounded and taken prisoner, and died of his wounds in the castle of Pavia.
Martino della Scala; Mantua, the count San Bonifacio; Ferrara, the marquis of Este, &c. The desire of tranquillity and repose from factions induced the citizens to submit to a chief who could make himself feared, and they chiefly required of him to punish quickly and severely those who troubled the public peace. They preferred summary and often brutal measures.

After the death of Archbishop Pergo the chapter was divided, as to the choice of his successor, between a nephew of Martino della Torre and another, Pope Alexander IV., who was offended with Martino for having allied himself with Pelivoco, a Guibeline, and suspected of heresy, named to the see the canon Otho Visconti, of a noble and powerful family, who had been exiled with the other nobles some years before. But as the Delta Torre opposed his coming, the pope disregarding him, the bishop elect continued for several years to remain on the estates of his family near the lake of Como, where he collected many of the disaffected, with whom he carried on a sort of predatory warfare against Milan. Martino della Torre having died in 1263, his brother Philip succeeded him as lord of Milan, Lod, and Novara, to which he added Como, Vercelli, and Bergamo, which towns elected him as their lord. Thus the foundation was laid of that consolidation of Lombardy into one state which in after-times was known by the title of the Duchy of Milan. Philip Torre died in 1265, and was succeeded by his nephew Napoleon della Torre. The Torriani, or Delta Torre family, did not alter the form of the institutions of Milan; the podestà, the credenza, and the consuls remained as before, with an authority and extent, apparently at least, of that of the lord. This policy was the same as that pursued by the first Medici at Florence.

As long as Pope Gregory X. lived, the archbishop Visconti was cautious in his movements, as that wise pontiff did not wish to add the name of the Guelfs or Guelphs to the Visconti. But after his death in 1276 Visconti grew bolder; he took possession of Como and Lecce, and at last marched against Milan. Napoleonella della Torre came out to meet him, but was surprised and taken prisoner. The terms of peace were agreed upon, and the example set by his uncle Martino. The people of Milan, hearing of the defeat, rose against the adherents of the Torriani, pelted them with stones, and drove them out of the city. A deputation of citizens was sent to the archbishop Visconti, whom they saluted as "Perpetual Lord of Milan." This occurred in January, 1277. "It was but one dynasty supplanting another. The Torriani, who had raised themselves by acting the part of demagogues, introduced money and vote, and disunited the state, and drove them into exile. The Visconti, returning to that part of the people described nobility, which was now ruined in fortune, and had become mercenary, found the people corrupted by servitute. There was no longer any independence of spirit in any class of citizens, the idea of liberty being dead. Although republican councils and popular institutions continued for a long time after, the principle of which once animated them was extinct, and the sovereign power was transmitted by the first and virtuous Visconti to their immediate and various descendants, without the nation attempting to recover it from their grasp." (Sismondi, Républ. Ital., ch. xxii.)

The power of the Visconti, though in fact hereditary, was at first, at least in form, dependent on the sanction of the people, as is evidenced by the title of the visconte. The council of the elders continued to discuss the laws which the lord proposed, to levy the taxes, superintend the expenditure, and to exercise the other functions of the visconte. But gradually, and especially from the time of Bernabò Visconti, the lord took upon himself to issue his own laws or statutes, to impose taxes, let to farm the revenue, make war, and, in short, exercise all the acts of sovereignty. In the fourteenth century the Visconti ranked among the most powerful Italian princes. They extended their dominions not only over Lombardy and Piedmont, but over the Po, but over parts of Montferat, including Asti, Alessandria, Bobbio, Tortona, and also to Parma, Piacenza, Bologna, and other towns south of the Po. Gian Galeazzo Visconti received in 1395, from the Emperor Wenceslaus, the title of 'Duke of Milan and Count of Pavia.' The charter of investiture included twenty-six towns and their territories, extending from the hills of Montferat to the lagoons of Venice. Besides these he obtained also possession by force or fraud of Genoa, Lucca, Pisa, Sienna, Parma, Bologna, and other parts of Romagna. Florence alone stood in his way, and he was preparing to attack it with all his forces, when he died of the plague, in September, 1402. In the following century the duchy of Milan became circumscribed within narrow limits. The Swiss possessed Brescia, Bergamo, and Crema, between the Mincio and the Adda, which last river became the boundary of the two states. The Swiss took possession of Bellinzona, and other valleys north of the Lago Maggiore. The duchy of Milan likewise lost its territory south of the Po. On the side of Piedmont its boundary was the Susa, including within its limits the extensive province of Novara, which now forms part of the Sardinian territories. The duchy of Milan therefore, as possessed by the later Visconti, was about 3,000 square miles in extent, and the last, Charles Visconti, who came into possession of Charles V., extended about 70 miles north to south from the Alps to the Po, and 60 miles east to west. Its principal cities were Milan, Pavia, and Cremona. Mantua formed a separate duchy until the war of the Spanish succession, when it was taken possession of by the house of Austria, and annexed to the duchy of Milan. These two duchies constituted Lombardy Proper. The duchy of Milan, during a century and a half that it remained under the Spanish branch of the house of Austria, declined greatly from its former greatness. The Spanish viceroys and governors was fatal to Milan, Naples, and Sicily. The wretched system of that administration and the misery of the population subject to it have been admirably portrayed by Manzoni, in his 'Promessi Sposi.'

With its transfer to the German branch of the house of Austria Lombardy began to recover its prosperity. But it was not until the Napoleonic wars that every sort proceeded with rapid strides, and the duchy of Milan assumed a new aspect. The population also increased rapidly. In 1749 it was 900,000, and in 1770 it was 1,136,000. Joseph II. pursued the career of improvement in Lombardy, and Venice; and when the time, remarked upon the dense population of this limit tract of country, and its fertility, which, besides abundantly supplying its inhabitants with all the necessaries of life, left them an annual surplus of produce for exportation to the amount of 1,260,000 sequins and of 16 millions of francs. The consequence of all this was, that the people of Lombardy grew attached to the Austrian sway, and when the French, in 1796, invaded the country, they found the inhabitants in general extremely cool towards them and their republic, the doges of Venice standing for the part of the latter, and the towns of the other districts, from the Venetian provinces of Bergamo and Brescia, and also from Modena, Bologna, and other countries south of the Po, which were not so well administrated, taking sides. The subsequent vicissitudes of Lombardy are noticed under the Lombardo-Venetian Kingdom. LOMBEZ. [Gerr.]

LOMBHOOK, or LOMBOK, an island of the Indian Archipelago, lying between 8° and 9° S. lat., and 117° and 117° 27' E. long. It has the island of Bali on the west, and of Sumbawa on the east. The form of Lombok is nearly square; its mean length and breadth being respectively 53 and 45 miles. The surface of the island is mountainous. The loftiest of its mountains, the peak of Lombok, is 12,000 feet above the level of the sea. The island is populous and well cultivated, and the whole surface is covered with verdure. It is abundantly supplied with springs of water, which feed several small streams; some of which fall into the sea, and which, in their fall, are supplied with vegetable and animal food, which enter the harbour may procure from the natives abundant supplies of oxen, swine, goats, poultry, and vegetables. The inhabitants, who are generally intelligent, and have attained a considerable degree of civilization, carry on a considerable trade with the islands of the group, which bring in their cargo of rice, which they cultivate by means of large tanks and reservoirs of water. The ruler or rajah of Lombok is tributary to the sultan of Bali, and the island has never been brought under subjection by any European power.

LONDON, Loch, is a large expanse of water, lying between 55° and 56° 20' N. lat., and 4° 30' and 4° 42' W. long., in a direction from north by west to south by east. On the east side it is bounded by the counties of Shrews-
and Perth, and on the west by that of Dumbarton. Its length is 24 miles. The most southern portion, which is nearly one-third of its length, is from four to seven miles wide, and contains several wooded islands. The whole number of islands in the lake is about thirty. North of Luss in Dumbartonshire it grows gradually narrower, being from two to one mile and even less in width. According to the Statistical Report of Scotland it covers a land surface of 13 square miles, and the shores of Loch Lomond, as well as the islands, are noted for their beauty, although in some places it is as much as 80 and even 130 fathoms deep. The surface is 22 feet above the mean level of the sea at Dumbarton. Its waters are supplied by a great lake and rivers throughout the Trossachs, the Trossachs themselves, and some of the southern streams; the surface of the lake gives a peculiar charm to the scenery by its rocky but beautiful and finely-wooded islands. Where the lake begins to narrow, Ben Lomond on the eastern bank raises its head to near 3000 feet above the sea. Ben Lomond is a mountain of great beauty, especially in winter, and has a fine edge to the very summit. Its beauty is increased by contrast with Tullich Hill and the mountains of Arrochar, which rise on the other side of the lake with a steep declivity and bare rock summits, to nearly the same elevation as Ben Lomond. The entire length of the lake is completely enclosed by high, steep, rocky, and dark mountain-masses.

Lomonosov, Michael Vasilevitch, the famous Russian chemist and literateur, was born in 1711, near Khokhmoig, in the government of Archangel. His father, who was a serf of the crown, was by occupation a fisherman, and Michael more than once accompanied him in fishing excursions in the White and Northern seas. The young Lomonosov was devoted by nature, and studies were his passion. He assisted by the instruction he received from a priest, and although his stock of books was exceedingly limited, being nearly confined to a grammar, a treatise on arithmetic, and a psalter, he made such diligent use of them, that it is said that the government required only one year's study, if anything to increase his desire for further information: he accordingly determined to make his way at once to Moscow, to which capital he journeyed in a cart that was conveying thither a load of frozen fish. Having arrived in Moscow, he matriculated at the University of Moscow, which he entered in 1732, and afterwards in the University of Kiev, he was sent to complete his education at the Academy of St. Petersburg in 1734, where he applied himself more particularly to mathematics, physics, chemistry, and mineralogy. After two years spent in these studies he was sent to Marburg, in order that he might perfect himself under the celebrated philosopher Christian Wolff, under whom he continued three years, and then proceeded to Vienna, where he studied chemistry, and a great deal of mineralogy and mining. Yet although chiefly occupied by such pursuits, he did not neglect literature, but diligently read all the best German poets of that period, and determined to rival them. One of his first literary efforts was a description of the iron, printed in the expression Anne, and which obtained for him general admiration.

In the meanwhile he had married during his residence at Marburg, the consequence of which was that he so involved himself in pecuniary difficulties, that he was forced to leave no time in returning to his own country. After his arrival at St. Petersburg he was made an associate of the Academy in 1741; and in 1746, professor of chemistry, besides which other appointments and honours were conferred upon him, and in 1750 he was made rector of the Academy. He died in 1765, at the age of 64.

The complete collection of his works, published by the Academy, which has passed through several editions, extends to sixteen volumes; and the titles alone of his works would serve to show the great range and diversity of Lomonosov's studies. It would in fact be difficult to name any one who can long continue the literary and philosophical multifariousness of his writings. Chronology, history, grammar, rhetoric, criticism, astronomy, physics, chemistry, meteorology, poetry—all engaged him by turns, and he showed himself to have a genius for all. Later diaries show the extent of his versatility in science, and that the dimmed the lustre which his writings of that class at first shed upon his name; but the service he rendered to the literature of his country, both by precept and example, his length of time can obscure. His grammar entitles him to be considered the unexampled poet, and as the first who gave regularity and stability to its elements: in poetry he has scarcely been equalled by any one, with the single exception of Derzhavin, in energy of style and sublimity of ideas; in mathematics, it was not that any of those who had gone before him, but had to purity and recast the language in which he wrote. Polevoi's biographical novel, entitled: 'M. V. Lomonosov,' 2 vols., 8vo., which contains very little of the works of Lomonosov, is distinguished by being an able translation of a work in science.

LONCHERES. Hilgè's name for a genus of Rodents, including Echinosorex of Geoffroy, a species of Hystrix of Schreber and others, and a species of Myoxus of Zimmerman and others. [MURIDE; RODENT.]

Lonchopteris, a genus of fossil ferns established by M. Adolphe Brongniart. The species belong principally to the coal formations of Scotland. A. fisculus, the first, is found in the Wealden deposits and in the green-sand.

The leaves are multipinnatifid, the pinnicles adnate to the rachis, marked by a midrib, and equal reticulated nerves, and uniform arole.

Lonchura, the name of Fringillidize, separated from Fringilla (Tomm.), by Liet.-Col. Sykes. Generic character—Bill strong, short, broad; mandibles entire, the upper one extending in an angle on the forehead, and with it, forming the arc of a circle. Wings moderate, subcominate; first quill very short and subapical, second, third, and fourth, nearly equal and longest. Tail graduated, lanceolate; middle tail feathers a little exceeding the others in length. Feet moderate, rather slender.

Col. Sykes observes that the peculiar spear-head form of the tail, and the ridge of the upper mandible and the forehead, forming a segment of the same circle, together with the habits of Lonchura missoria, Chest and leucanota, afford sufficient characteristics for their separation. Col. Sykes describes a species of Lonchura, L. tecta (Bonte-roza quadricolor, Lath.), belongs to the same group.

Locality of the three species the Dutkun (Decan). The first two are recorded as found only in the Ghati.

Lonchura Chest, Sykes, is described as a pale cinnabar-brown; the wings with black edges, and tail-feathers deep brown. Irides deep red-brown. Female with the colours less intense. Length of the body 5 inches; of the tail, 2.

Habit, Reproduction, &c.—Col. Sykes states that these birds live in small families, and that he frequently found them in possession of the deserted nests of the Plocus Philippensis; their own nest, which he exhibited on a subsequent occasion, is a perfect hollow ball, made of a delicate material, and of about the size of a common apple. It was found in the fork of a branch of the Mimosa Arabia, and contained ten oblong minute white eggs, not much larger than peas, being 3/8ths an inch long by 3/8ths in diameter. The cry of the bird is chest, chest, chest, chest, chest, chest, chest, chest, chest, chest.

London, the capital of the United Kingdom of Great Britain and Ireland, stands at the head of the navigable tideway of the river Thames. The latitude of the centre of the dome of St. Paul's cathedral, which stands exactly in the centre of what is strictly the City of London, is 51° 30' 47" 59', and the longitude is 5° 42' 2" W. of Greenwich. The latitude of Greenwich Observatory, according to Mr. Airy's determination, is 51° 3° 56' 28" N. This portion of the meridian, lying within the limits of the districts into which the municipal franchises and privileges extend, is divided into two portions, London within
Of London: but it has been computed that, including squares, lanes, courts, and alleys, they amount to between 8000 and 10,000. The principal thoroughfares follow the course of the Thames from east to west. The longest line enters from Essex at Whitechapel, and runs in a nearly straight line to St. Paul’s cathedral, where it divides into two arms, one of which continues far beyond Newgate Street, and the other arm continues more to the north, through Holborn to the western extremity of Oxford-street and Kensington Gravel pits. From a computation made in December, 1784, it appears there were there, in and near the City of London, 100 almshouses, 20 hospitals and infirmaries, 3 colleges, 13 public prisons, 15 flesh-markets, 1 market for live cattle, 1 for herbs, and 23 for corn, coals, hay, &c., 15 innns of court, 27 public squares, 49 halls for companies, 4 public office free schools, 131 charity schools, 207 innns, 447 ways, 651 coffee-houses, 5975 ale-houses, 10,000 hackney-coaches, 4,998 hackney-chairs, and 7000 streets, lanes, courts, and alleys.

From the official returns obtained in 1832 by the commissioners appointed to consider concerning the division of counties and the boundaries of boroughs, it appeared that there were at that time in each of the proposed parliamentary divisions the following number of houses rated at the yearly value of 10s. and upwards, and the assessed taxes paid within those divisions were:

| City of London | 12,656 |
| City of Westminster | 1,227,607 |
| Borough of Southwark | 21,630 |
| Lambeth | 3,910 |
| St. Mary-le-bone | 27,888 |
| Marylebone | 66,777 |
| Tower Hamlets | 39,140 |

From which it appears that the metropolis contained 25.4 per cent. of the total number of houses rated above £10 in the metropolis in 1834 in Great Britain, and that the inhabitants paid 29.61 per cent. of the whole amount of assessed taxes, exclusive of the land-tax.

Soil, &c.—The general substratum of London is clay. Beds of clay, from 15 to 200 feet in thickness, proper for making tiles, are found in the immediate neighbourhood of the City, and all around the metropolis brick-making is or has been carried on extensively. The clay is in many parts, especially on the north side of the river, for a distance of more than a mile, covered with a thick bed of gravel.

The mean annual temperature of the air in London, as deduced by Mr. I. Howard from a series of observations carried on during twenty years, is 50° F. The mean temperature of each month, during the period here mentioned, was—

<table>
<thead>
<tr>
<th>Month</th>
<th>Temperature (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>34</td>
</tr>
<tr>
<td>February</td>
<td>62</td>
</tr>
<tr>
<td>March</td>
<td>69</td>
</tr>
<tr>
<td>April</td>
<td>79</td>
</tr>
<tr>
<td>May</td>
<td>89</td>
</tr>
<tr>
<td>June</td>
<td>96</td>
</tr>
</tbody>
</table>

The annual amount of rain which fell in each of the nine years from the beginning of the secular safety society at Chiswick, and in each month of the year 1834, was as follows:—(It is not known that there is any gauge kept within the limits of the town upon which reliance can be placed.)

<table>
<thead>
<tr>
<th>Month</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>2.87</td>
</tr>
<tr>
<td>February</td>
<td>0.37</td>
</tr>
<tr>
<td>March</td>
<td>0.86</td>
</tr>
<tr>
<td>April</td>
<td>0.67</td>
</tr>
<tr>
<td>May</td>
<td>1.19</td>
</tr>
<tr>
<td>June</td>
<td>1.63</td>
</tr>
<tr>
<td>July</td>
<td>1.79</td>
</tr>
<tr>
<td>August</td>
<td>7.73</td>
</tr>
<tr>
<td>September</td>
<td>7.79</td>
</tr>
<tr>
<td>October</td>
<td>0.43</td>
</tr>
<tr>
<td>Average</td>
<td>24.10</td>
</tr>
</tbody>
</table>

According to observations made during a series of years.
The following table shows the directions in which the wind has blown during each month of the year:

<table>
<thead>
<tr>
<th>Month</th>
<th>N.</th>
<th>E.</th>
<th>S.</th>
<th>W.</th>
<th>NW</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>34</td>
<td>11</td>
<td>22</td>
<td>18</td>
<td>64</td>
</tr>
<tr>
<td>February</td>
<td>14</td>
<td>21</td>
<td>22</td>
<td>54</td>
<td>37</td>
</tr>
<tr>
<td>March</td>
<td>24</td>
<td>3</td>
<td>21</td>
<td>24</td>
<td>31</td>
</tr>
<tr>
<td>April</td>
<td>21</td>
<td>3</td>
<td>24</td>
<td>21</td>
<td>31</td>
</tr>
<tr>
<td>May</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>62</td>
<td>37</td>
</tr>
<tr>
<td>June</td>
<td>21</td>
<td>3</td>
<td>2</td>
<td>62</td>
<td>37</td>
</tr>
<tr>
<td>July</td>
<td>21</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>August</td>
<td>21</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>September</td>
<td>21</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>3</td>
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<tr>
<td>October</td>
<td>21</td>
<td>3</td>
<td>2</td>
<td>11</td>
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<tr>
<td>November</td>
<td>21</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>December</td>
<td>21</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>3</td>
</tr>
</tbody>
</table>

Architectures.—Although London is known to have existed as a town for near two thousand years, with the exception of here and there a building, or mass of old tenements, all the rest is comparatively of yesterday, there being very few portions which are more than a century old, and those in situations where they must be purposely sought out. What Roman London was is now entirely matter of conjecture, for although plaster houses and the like have been from time to time discovered, they merely prove that Roman structures of some splendour formerly existed on the sites where such remains have been dug up; but in regard to the buildings themselves they afford no information: still less do they assist us in forming any idea of the general mode of building and the aspect of the city. Imagination may speculate freely as to the grandeur of Londinium under the Roman sway, but it is impossible for it to cast us into the idea of the city's presenting any signs of grandeur in after-times, for under both its Anglo-Saxon and Norman sovereigns it must have been, as we shall presently see, in a most wretched condition, and its inhabitants subjected to what would now be considered intolerable nuisances and inconveniences. Londinium was most probably a British town, that is, a large enclosure protected by a rampart and fosse, previous to the invasion of the island by Caesar, in whose time a considerable traffic was carried on between the Britons and the Gauls. But though Caesar crossed the Thames, he makes no mention of Londinium. The British and their place and name are lost; it is spoken of as not then honoured with the name of a colonia, but still as a place much frequented by merchants and as a great depot of merchandise. In the revolt of Boudicca (a.d. 61), Suetonius, the Roman commander, abandoned the city, and the Britons and their inhabitants who did not leave it with Suetonius; a circumstance which leads us to infer that it was then chiefly occupied as a Roman station. If any conclusion can be drawn from the brief notice of Tacitus, London was then incapable of defending any attack, and had probably no wall that could resist the enemy; though that historian mentions the wilders as the cause of its being abandoned by Suetonius. It does not appear from Tacitus whether the place was then destroyed by the Britons. At a later date London appears to have been more or less a cold aggregation of houses, which had not the name of Augustus. (Amm. Marcell., xxvii. 8.) The antient wall of London, ascribed to Theodosius, governor of Britain, began at a fort near the present site of the Tower, and continued along the Minories, to Cripplegate, Newgate, and Ludgate. The walls are said to have enclosed an area of somewhat more than three miles in circumference, and to have been guarded by fifteen towers, which latter are conjectured to have been 40 feet high, and the walls 32. The prætorium and its adjuncts are supposed to have occupied the site of the present St. Paul's, and black-grounded pavements have been discovered there and at the Lothbury gate of the Bank, and St. Mary's Woolnoth.

In regard to Anglo-Saxon London, our information is as scanty as it is with regard to the Roman city; but we may depend on a Æthelweard, who visited the whole of the island during the barbarous period that succeeded the final departure of the Romans from the island, when it was alternately attacked and ravaged by the Piets and Scots, by the Saxons and Angles. In the sixth century it became the capital of the Anglo-Saxon kingdom of Essex, and in the following one a bishop's see. Sebert, king of Essex, having been converted to Christianity, erected a cathedral church to St. Peter, another church to St. Paul, and a monastic church to St. Peter, on the sites of the present cathedral and St. Paul's. All however that we know of London, till for many centuries afterwards, extends no further than a few sites and names, the memory of which has been preserved, notwithstanding the successive changes to which the places themselves have been subjected. At the time of the Conquest, the city could have been little more than an assemblage of houses, intersected by narrow lanes, the whole enclosed by walls, except on the side towards the river. It ran on the banks of the river in Castle Street, and on the south side of the present cathedral, that the residence of the Anglo-Saxon kings stood, erected either by Alfric, Edward, or Athelstan; most probably by the last, whose name is retained in that of Adel or Adle Hill. This Anglo-Saxon palace was forsaken by Edward the Confessor, who removed to that which he had erected at Westminster; after which, together with the cathedral, the first-mentioned building was destroyed by fire in 1067. The Tower Royal (at the end of the street so called) was another palace, erected after the Norman conquest, but its origin cannot be traced. In Richard II's time it was called the Royal Wardrobe, and was granted by Richard III. to the first duke of Norfolk.

Of public buildings there were scarcely any besides religious edifices, although the remains of the Norman were previous to the Reformation, and of several of them the names are retained at the present day, viz. Black Friars, White Friars, Crutched Friars, Charterhouse (the Charterhouse); Priories—St. John of Jerusalem, Clerkenwell (St. Stephen's Gate), Southwark, London (St. Mary), St. Mary's Hospital, Southwark; Nunneries—St. Helen's, Bishopsgate Street, and Holywell, in Holywell Lane, Shoreditch; Hospitals—St. Giles's, St. James's the Palace, St. Katherine's, and St. Thomas's. What few residences there were of any note were scattered about, and mingled with the meanest habitations: that of Henry, earl of Northumberland in the time of Henry VI., stood in Fenchurch Street; Crosby House (1470), a portion of which still remains, and has lately been restored, in Bishopsgate Street. Oxford House, the residence of the Venetian ambassador, was in St. Swithin's Lane, where were the houses of Sir Richard Empson and Dudley, the notorious agents of Henry VII.; and that of Cromwell, earl of Essex, stood in Throgmorton Street, while at a later period Aldergate was the seat of foreign merchants. Few houses, and few houses, and warehouses, were inhabited by the noble and the opulent. The antient residence of the bishops of London was in Aldergate street.

As to the actual appearance and condition of the metropolis we have little more than conjectural and piecemeal information until we come down to times that may comparatively be termed recent; for contemporary chroniclers and topographers seem to have had no regard to the curiosity of posterity; but contented themselves with noting, whether briefly or prolixly, most truly, 'what they beheld, without aiming at anything like a graphic description of the whole. We may however easily picture to ourselves what London must have been even in the first half of the sixteenth century, when the act for improving and paving the city, for the benefit of passengers and traffic, was passed. The streets were composed of pits and sloughs, very perilous and noxious as well for all the king's subjects on horseback as on foot, with carriages.' If to the formidable inconveniences to which passengers and traffic were subjected, we add those of narrow crooked streets, gloomy by day and lit by that darkness at night into which we shall be forced to add a few shades more to the picture of the noxious condition of the citizens. Perhaps even the vilest bye-lanes, alleys, and courts that are now to be met with, are, except in regard to the houses themselves and the streets above mentioned, of a whole degree worse than was the London of 'old times' generally. No wonder therefore that pestilence and fire should at various times have committed such havoc, the population being densely crowded up in confined and badly ventilated dwellings, and the streets, the streets, the streets, cooped up with thatched roofs, and having each story overhanging that immediately beneath it. While this last-mentioned circumstance must have contributed not a little to unhealthiness by leaving very little space between the uppermost stories of the oppo
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...sites, it must also have rendered fires particularly destructive, so that with the denseness of the buildings, the combustibility of their materials, and an insufficient supply of water, the breaking out of a fire must have threatened a conflagration of a whole neighbourhood, as is still the case at Constantinople. At the present day such a conflagration as that of the great fire of 1666 would be almost impossible, even if such efforts were made by the state to prevent its promotion, through the houses of religious houses, and some few private residences may have been substantially built, and perhaps entitled to the epithet of magnificent; especially when compared with the ordinary dwellings, they must have been altogether insufficient to control its general rule and magnitude. The degree of comfort or even luxury there may have been in the abodes of a few great nobles, there can be no doubt that the people generally, even including the wealthier burghers, were much better off than now. The exceptions from it are not to be mistaken for the rule itself; and if we contrast the condition of society class by class, we find that, setting aside the very highest, by whom greater state was affected than at present, all the rest will bear no comparison with the corresponding classes of the present times.

Many things which were formerly the luxuries of the few have since become the every-day necessities of the many; to say nothing of the numerous conveniences and improvements now placed within the reach of nearly every tenant of a house; there is no need of the labour and expense to procure them. The pictures given us by Erasmus and Holinshed of the manners and domestic economy of our ancestors, so far from being at all flattering, portray a state of semi-barbarism; so that whatever occasion there may have been for regulating and restraining etiquette in dress, there was no need of sumptuary laws to check excess of refinement in houses and furniture. In the early part of the fifteenth century even the upland towns in the north, and the small towns in the south were described by the foreigners who came over with Philip II., as consisting of walls built with 'sticks and dirt.' In the more populous the generality of the houses may have been a degree better; yet Holinshed himself admits that London had a very mean appearance in comparison with some of the western cities. During the sixteenth century however it greatly extended itself westward along the north bank of the river, where many of the nobility erected 'fayre and stately' mansions, and the parishes, as partly wall, and transmitted its name to the present Exeter Hall. Still greatly as the metropolis had increased in extent in the reign of Elizabeth, the map of it at that period (a cut of which may be seen in the 'Penny Magazine,' No. 427), shows a mere dreariness of landscape and expression which are present gigantic dimensions: all the north and west of the Strand was open fields and country, as well as nearly all the south bank of the river, now a populous and extensive district, and connected with the northern side by several bridges, whereas before the erection of Westminster Bridge, London was the only remaining trace of the others being left, although the names of several of them are still retained in the streets opening into the Strand. Even Exeter Change, which occupied the site of Exeter House, originally built by Mr. Grey, Alderman, has been entirely demolished and replaced by the present gigantic dimensions:

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promotion, and the increase of building, little advance was made in the architecture of the metropolis during the latter part of the last century. Almost the only public edifices of this time at all entitled to the epithet of magnificent were SomerSET House and the Bank; which latter however may with equal propriety be considered as belonging to the present century, since it was not completed as at present till about 1826. The Adelphi, Portland and Stratford Places, and two sides of Fitzroy Square, are the only public works, and as specimens of street architecture are (at least the first-mentioned) of exceedingly questionable taste, although they may fairly be allowed to be handsome in their general air and appearance. The Adelphi however are connected (with the improvement of the square style of ordinary house-building, and of having substituted convenience, cheerfulness, and lightness for the incommo-
duousness and heavy taste which formerly prevailed. The Pantheon, in Oxford Street, by James Wyatt, ought perhaps to be taken as a piece of architecture of some note, belonging to the latter half of the last century; but it no longer exists, save in name alone, being now totally altered, except some portion of the facade, which in itself displays no very great taste, and has not sufficient size to give a sense of half a dozen persons, and has a very different purpose from its original one. As buildings, none of the theatres can be dated farther back than the present century, at the commencement of which, or about 1800, may be observed Drury Lane Theatre (the nucleus of a cluster of other squares that have been added to the quadrangular town neighbourhood) first formed. Covent-Garden Theatre, the first production of Sir R. Smirke, and almost the first specimen of the Grecian Doric style in the metropolis, is so generally admired in its architecture; or rather it has so happened that it has been followed by numerous other structures and improvements, which have given (at least as far as they extend) quite a different aspect to the town.

With such the widest stretch to architectural taste, or however objectionable when examined in detail, it cannot be denied that both Regent Street and the Regent's Park were magnificent improvements, and have, moreover, led to a variety of others. They have certainly treated in a manner that would formerly have been considered quite prodigious; and if that taste be in many instances very bad—not to say paltry—it is upon the whole preferable to the dull monotony that used, as far as their architecture was con-
trolled by the notion of uniformity of style which was then in vogue in the metropolis. The Strand affords a very fair com-
parison between the old and new modes of building, the houses being of the same class, though very different in architecture—character; and as even the most prejudiced in favour of uniformity of style cannot but be almost taken for granted, not only that attention to appear-
ce is more studied than it used to be, but that the conditions of shopkeepers and tradesmen is improving likewise. A comparison by the Post-Office in Bridge, and forming a portion of it, in consequence of the change of site, have already greatly metamorphosed that part of the city, and awakened a spirit of improvement which bids fair to keep pace with that at the other end of the town which started from the one just mentioned to Finsbury Circus, is decidedly better than that near the bridge. While it displays a pleasing regularity of design and uniformity of character, it does not offend by too great sameness and monotony, the elevations being higher and the streets narrower, so that the houses have an air of greater loftiness than usual, owing to the breadth of the street not exceeding their height. When the Royal Exchange (destroyed by fire on the night of Jan. 10th, 1838) shall come to be replaced, there will be visible to the other improvements in its immediate vicinity. In addition to this, it is in contemplation to form new streets where at present no public thoroughfares exist or only as such are very crooked and dark. One of these is from the Post Office in Lombard Street northwards; a third to open a direct communication between Holborn and the Strand, along the east side of Lincoln's Inn Fields. A similar project is now on foot for improving the neighbourhood of Westminster, and the streets are intended to lead from the west front of the Abbey to Piccadilly. It is however too much to expect that any of these for other improvements of the same kind must be tolerably apparent to any one who looks at a map of London; and among them would be a direct line of communication from Mr. Nash's Lane into Oxford Street; another from Covent Street into the Covent Garden Market; and a third from Holborn into the Strand, to be obtained by widening and rebuilding the whole of Drury Lane.

With the exception of the terraces in the Regent's Park, the Hyde Park Terrace near Bayswater, and that in St. James's Park—which are for the greater part more tawdy than rich in point of design,—none of the newer ranges of private houses make any pretension to architectural decoration; or if any thing of the kind be occasionally attempted, as in Eaton Square, &c., it is so meagre in itself and so grudgingly bestowed, as to be quite the reverse of satisfactory. Internally however the houses themselves are, in proportion to their size, far more commodious and better fitted up than those of the ancient town. All the houses of the new town are likewise sufficiently airy and cheerful, owing both to the greater width of the streets themselves, and to the greater breadth of the foot-pavements and the areas before the houses; while, for the last reason, the kitchens are less precipitous and the fireplaces less confined than in the narrower streets. Besides this, another advantage is that the inhabitants are less exposed to the observation of their opposite neighbours; while the system of macadamisation, which has been adopted in some places, has considerably blunted the nuisance of the rattling of carriages. In fact, as regards the laying out, paving, and lighting of the streets, there is very little room for further improvement: there is however one serious inconvenience attending some of the streets, which are excessively crowded. As for example, there are on either side of the carriage-way so great a width of the carriage-way being so great as to render it hazardous to cross them when filled with carriages. This is particularly the case in Regent Street; yet the remedy for it is easy, as all danger and inconvenience to foot-passen-
gers are frequent in the Regent Street from the dilatory pace of the carriage along the carriage-way.
some advancement has of late been made even in this respect, both by the establishment of the National Gallery and the unreserved access now afforded to the British Museum, whose collections have been greatly increased in the present century. The Soanean Museum can as yet hardly be said to be open to the public; but it has been made to have both Westminster Abby and St. Paul's opened to visitors gratuitously; but it has hitherto been unsuccessful. In the meanwhile annual exhibitions are increasing; formerly there was only that of the Royal Academy; where there are now two at the British Institution, for modern pictures, the other for works of the old masters; and that of the Society of British Artists, besides one or two of paintings in water-colours. To these may be added various other exhibitions of more or less recent origin, as dioramas. Formerly the 'Stereoscopic' in the Temple, and the animals at Exeter Change used to be far famed among the sights of London; but in lieu of them we have now the Zoological Gardens at the Regent's Park and the Surrey Zoological Gardens. In the course of a few years the Regent's Park will most probably possess another novel and attractive exhibition, it being intended to convert the whole of the inner circle into a botanic garden, with buildings and other ornamental accessories; and the mention of this reminds us that St. James's Park has been altered greatly for the convenience of the coming meeting. In the formal canal, the appearance of a well laid-out pleasure-ground, with a lake studded by islets. The Admiralty Gallery, Lowther Arcade, and the Polytechnic Institute, Regent-street (opened August, 1838), afford proof of a different taste. The idea, which, besides applying to the various literary and scientific institutions, of which there is now some one or other in almost every quarter of the metropolis, is to create a class of establishments which, as now organized, is said to be perfect according to our times, and to act as clubs, principally at the west-end of the town, which in some degree partake of the nature of places of literary as well as convivial meeting. Some of them are not only splendidly fitted-up and afford the most luxurious accommodation, but are made up of different and natural objects. When the Reform Club is finished, the south side of Pall-Mall will consist almost wholly of these palæo-like edifices, whose façades offer such a contrast to that homeliness of exterior which, with here and there an exception, prevails among what are internally splendid private mansions.

One innovation of very recent date, though long before demanded by a regard to public health, is the formation of cemeteries beyond the suburbs. Some years before anything of the kind was thought of, a scheme was brought forward for one to the north of the Regent's Park, but it failed probably from its having been on too gigantic and expensive a scale; for that necropolis has been to have been a sort of mistic Athens, with fac-similes of all its temples and monuments, etc. The idea was taken up by other parties, and the Kelsall Green Cemetery was formed about 1832. There are now two more; one at Highgate, the other at Norwood, both of which were executed chiefly in 1838, and a fourth and fifth are about to be undertaken at Brompton and Newington Butts.

Having thus far given a summary account of the growth of the metropolis, and of some of the principal changes occasioned by the increase of wealth, we should proceed to give some description of the more important public buildings; yet, unless we were to confine ourselves to merely one or two, which, as being the most noted, have already been described by others again and again, we should greatly exceed all reasonable limits. We therefore adopt the more novel system, and make use of extracts, in a tabular form and in chronological order, of a list of such public buildings as are most worthy of notice on account of their architecture. This will at all events furnish a synoptical view of our metropolitan architecture, and were similar tables drawn up of the growth of other great towns in the south of England, some of our own large provincial towns, more exact information of the kind might be comprised in a few leaves than can otherwise be obtained by turning over a vast number of pages. We shall however here prefix to the table itself a few general remarks as to the nature of public buildings, and to others, more satisfactory perhaps than the very brief comments there inserted.

Of larger architecture the metropolis now exhibits very little, with the exception of parts of the Tower, the Temple Church, Westminster Abbey and Hall, and one or two churches, such as St. Bartholomew the Great, and St. Mary Overies, at the south end of London Bridge, which was only restored a few years ago. Other specimens that had been spared by fire have been swept away by improvement, among the rest the An Exchange and Rly. House. The improvement in this respect been as merciless as fire, and, in the opinion of antiquaries, perhaps no less sacrilegious, it has at least cleared away the mass of ugly buildings which formerly blocked it up the noble abbey of Westminster: the vast institution there, however, is still attached to, both of them among the finest specimens of their respective styles. Wren's work, however, in the western towers of the abbey, shows him to have had the feeling of Gothic architecture, which style did not become popular before the eighteenth century. As the architect of St. Martin's, Wren is justly entitled to the reputation which he enjoys; and that polite edifice has procured for his other works more celebrity that they would otherwise have enjoyed; certainly more than any other we can produce; but the whole of that vast edifice erected by him exhibit a heavy uncouth mannerism, with hardly a redeeming beauty. Even the steeples of Bow Church and St. Bride's have been greatly over-praised: its same remark applies to the interior of St. Stephen's, Wren's most magnificent masterpiece, with its immenseサイズ内部 and cupola and columns, all the rest being poor and trivial to meanness. The few civic buildings which he erected were not in a more refined taste; nor would such structure as the former Fishmongers' Hall and Court of Common Pleas, as well converted into a butcher market, and Temple Bar, add to the reputation of an architect of the present day.

In the next age a different mode of design began to be adopted for churches, and those of St. George's, Hanover square, St. Martin's, and St. George's, Bloomsbury, which are certainly not otherwise inferior to Wren's, greatly pass them in the classical dignity which they derive from their porticoes. It has indeed hitherto been the fashion—such as in the last-mentioned edifices, and to depry it on an account of the supposed absurdity of its steeples, notwithstanding that, in its outline and architectural expression, that campanile exhibits far greater beauty and proper than any other we can produce: while the whole of that displayed in the design of St. Martin's has escaped from a proach on account of its portico alone. How far the architec of the latter was really gifted with taste will be more closely judged by examining his church of St. Mary-le-Strand, a beautiful edifice, without being mere as the steeples of which also by Gibbs, will dissuase the before the opinion passed on it by Malton, who terms it a "disturbing fabric."

Besides churches, there are very few public buildings which make such architectural pretension; there are very few now remaining. The former building of the Bank of England, begun in 1734, possessed little beauty or grace, though the wings afterwards added by Sir John Taylor gave it its present extent of façade. St. Bartholomew's Hospital, commenced in 1730, is a tolerably fair specimen of the average taste of design at that period which being the case, it is rather surprising that the Mansion House (1739) should have been so severely censured, taken altogether, it certainly possesses an air of dignity and the most magnificent piece of work of the Ironmongers' Hall, Fenchurch-street, begun a few years later (1748), is very far superior in external appearance any other of the City companies'halls then erected. It is more on the model of the English building, and yet among them were two of the noblest which the even now possesses, namely, the Excise Office and New.

The merit of the latter has been universally admitted; other, on the contrary, is scarcely ever mentioned, not by the citizens of London, but by the greatest architects and critics, who generally judge of a good building in a great manner combined with simplicity, it supersedes any else in the metropolis; not so the front of Guildhall Dance (1789), which is utterly unworthy of the hands of Gothic interior which it masks, being in a most mongrel manner, in which it is painted over with the ornament of its absurdities. The small and picturesque front of the joining Gothic chapel has now disappeared, it having been taken down some years ago to make room for a building comprising the Bankruptcy Courts, &c., a most

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tasteless design. After the Excise Office and Newgate, Somerset House is almost the only public building which distinguishes the reign of George III.; for all that has been done in the present century may be considered as commencing with the Regency. The end of the last century was here, as it has been in the most exquisitely more decidedly Greek than anything which had preceded it. Compared with what it has since been, architecture was then at a rather low ebb; for although one or two of the buildings above mentioned are noble works, they must be taken as exceptions to the general character and monotonous style which stamps this period, and which such erections as the Adelphi and Portland-place rather confirm than contradict. With the exception of St. Peter-le-Poer (1791) and St. Martin's Outwich (1790), not one church was built from the first establishment of the new public building in the Regency. The year 1809 is the date from which the metropolitan architecture of the present century may be said to begin. The two Grecian orders, Doric and Ionic, were for the first time adopted as the standard, and much has been done in the last quarter of the century with regard to the columns, entablatures, and pediments. This pseudo-classical style, consisting in imitating the order and many of the details of the Grecian architecture, in has more than one instance been carried to a most offensive extent; but perhaps the most profligate of all was the original front of the College of Surgeons, consisting of an Ionic hexastyle attached to a front which, as far from being anything like graceful or pleasing, is in the most vulgar and barbarous taste.

Both the Custom-house and Bethlehem Hospital exhibit in some degree the same perverseness and incongruity, while many other buildings, though more consistent, are nevertheless, as the result of the two unfortunate periods, conspicuously but barrenness of invention. Now that the novelty attending Grecian architecture, on its first introduction among us, has passed away, we begin to be disinterestedly sensible of this, and to perceive that little or nothing has been done in the long interval since it was first found, to render it more palatable or more copious than we first found it. Such an awkwardly feasible imitation of Athenian architecture as St. Pancras was not only excusable but laudable; yet one such specimen of the kind is sufficient; especially where we find it in the most sightly and most conspicuous part of London. In regard to finish of details and beauty of execution, though even in St. Pancras the entablature and pediment look chillingly naked in comparison with the columns and the doors within the portico, which latter are all in the Grecian style of decoration. The small chapel of St. Mark's, in North Audley Street, forms a rather striking exception from the frigidity and commonplace of Grecian design when reduced to the mere imitation of ancient columns. Another pleasing exception is afforded by the New Corn Exchange, Mark Lane, which manifests some degree of original design, rather than a mere imitation of it, as a result of the College of Physicians, the most that can be said is that they are respectable copies, upon a very respectable scale. That of the Post-office (an Ionic hexastyle) is perhaps for its size and spaciousness, and is well arranged; owing to its partly receding within the building as well as projecting from it, and to having only a large central door, with a lesser one on each side of it; yet all the rest is rather poor, nor is there much of the genuine expression of the style aimed at. The façade of the University College is a more original and finer composition, besides affording the only instance of a decastylic portico. In the front of the National Gallery the architect of the structure last-men- tioned has been by no means so bunglingly by itself of the octastyle portico and the ascents to it make a pleasing and rather striking composition, but the cornice is by far too plain and meagre for the rich Corinthian columns, while the dome is positively bad, and altogether different in feeling from the rest of the erection. The inferior and less than satisfactory character of their columns these two porticoes (of the University College and National Gallery) exhibit some degree of novelty, but as yet nearly everything of the kind we possess is upon a uniform scale far inferior to that of some of the great public buildings in Paris. The only exception to this uniformity of design has been the Doric Propyleum or Railway Terminus, Euston Square. Here the order displays itself effectively, not only on account of its size and proportions, but also because there are no windows nor other features that would interfere with its effect. The British Fire Office, on the contrary, exhibits a most perverse application of a Grecian Doric to a building which in itself is in the most extravagant and fantastic taste.

Most of the new churches in London and its suburbs professing to be Greek are little better than parodies and travesties of the style. They exhibit moreover a wearisome repetition of the same stile hackneyed ideas, or rather the want of any idea beyond that of packing a few columns to the front and of what would be of any interest or other spirits as well as mongrel samples of the Anglo-Grecian school seem at length to have brought the style into disrepute, and accordingly some of the more recent buildings give a desire to return to the Italian, which if purified and treated with originality instead of by the usual method, as it has been treated, would, so far from interfering with itself, would, in the numerous copying, would in most cases recommend itself in preference to the other. The Travellers' Club-house, particularly the garden front, is a charming and beautifully finished example of the Italian, and its architect (Mr. Waterhouse) has shown himself as capable of a very sound Grecian in the new facade of the College of Surgeons. Goldsmith's Hall is Italian of a more heavily magnificent character, which however is greatly injured by the poverty of the ground floor and its windows, which is left very blank, and without itself in the rest of the building.

Two buildings erected in 1838, the London and Westminster Bank, and the new synagogue, St. Helen's Place, are long also to the Italian school.

Here we must bring to a conclusion this general sum of the architecture of the metropolis, which it would have been a far easier task to expand than to confine to these limits. We have attempted nothing like either description or detailed criticism, the former of which is at least in the case of English architects, of any, with the objection of works. The one more especially devoted to buildings and architecture in the new edition of ' Illustrations of the Public Buildings of London,' by W. H. Lees. The article ' London,' in Moore's ' English Counties,' will also be found to contain a great deal of information; while in the volumes of the ' Companion to the Almanac,' most of the edifices erected within the last six or seven years are described at some length. In regard to detailed criticism, the series of papers is the Printing Machine, entitled ' Structure on Structures,' gives the New Palace, York Column, and various other subjects; and a similar series of architectural critiques on other metropolitan buildings has been commenced in the Civil Engineer's Journal.

Table of Public Buildings most worthy of Notice for their Architecture.

<table>
<thead>
<tr>
<th>Date</th>
<th>Architect</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Whitewall Chapel</td>
<td>1619</td>
<td>Inigo Jones</td>
</tr>
<tr>
<td>York Stairs</td>
<td>1626</td>
<td>Dito</td>
</tr>
<tr>
<td>St. Paul's, Covent Garden</td>
<td>1631</td>
<td>Dito</td>
</tr>
<tr>
<td>Temple Bar</td>
<td>1670-2</td>
<td>Sir C. Wren</td>
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<tr>
<td>The Monument</td>
<td>1671-4</td>
<td>Dito</td>
</tr>
<tr>
<td>St. Stephen's, Walbrook</td>
<td>1672-9</td>
<td>Dito</td>
</tr>
<tr>
<td>St. Paul's Cathedral, begun</td>
<td>1675</td>
<td>Dito</td>
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</table>
### Eighteenth Century.

<table>
<thead>
<tr>
<th>Date</th>
<th>Architect</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>1710</td>
<td></td>
<td>Style Italo-Roman; exterior both magnificent and picturesque, though not faultless.</td>
</tr>
<tr>
<td>1724</td>
<td>J. James</td>
<td>Portico hexastyle, Corinthian.</td>
</tr>
<tr>
<td>1721-6</td>
<td>J. Gibbs</td>
<td>Portico hexastyle, Corinthian; the general style bad.</td>
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<tr>
<td>1729-53</td>
<td>Haxmooor</td>
<td>Ditto, ditto; Campanile excellent.</td>
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<tr>
<td>1739-50</td>
<td>Labelye</td>
<td>Length 1066 feet.</td>
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<tr>
<td>1748</td>
<td>Holdin</td>
<td>Italian Ionic on basement.</td>
</tr>
<tr>
<td>1751</td>
<td>W. Kent</td>
<td>Length 1000 feet.</td>
</tr>
<tr>
<td>1760-70</td>
<td>R. Mynde</td>
<td>Plain in design, but of most commanding aspect.</td>
</tr>
<tr>
<td>1769</td>
<td>James Gandon</td>
<td>Admireable in design and character. [front 590 feet.</td>
</tr>
<tr>
<td>1770</td>
<td>Adams</td>
<td>Though poor in parts, a good example of Italian.</td>
</tr>
<tr>
<td>1770-82</td>
<td>Dance</td>
<td>River East front handsome.</td>
</tr>
<tr>
<td>1776</td>
<td>Sir W. Chambers</td>
<td>Very picturesque in parts.</td>
</tr>
<tr>
<td>1780</td>
<td>Rogers</td>
<td>Hexastyle loggia, Grecian Ionic; sculptured frieze and pediment.</td>
</tr>
<tr>
<td>1789-1826</td>
<td>Sir J. Soane</td>
<td></td>
</tr>
<tr>
<td>1799</td>
<td>R. Jupp</td>
<td></td>
</tr>
</tbody>
</table>

### Nineteenth Century.

<table>
<thead>
<tr>
<th>Date</th>
<th>Architect</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1808-9</td>
<td>Sir R. Smirke</td>
<td>Grecian Doric; tetraestyle portico.</td>
</tr>
<tr>
<td>1811-12</td>
<td>B. Wyatt</td>
<td>Portico hexastyle, Ionic. Length 569 feet.</td>
</tr>
<tr>
<td>1818</td>
<td>Nash and Repton</td>
<td>Length 1326 feet.</td>
</tr>
<tr>
<td>1819-15</td>
<td>J. Lewis</td>
<td>Grecian Doric on a basement.</td>
</tr>
<tr>
<td>1821</td>
<td>J. Rennie</td>
<td>The Long Room and centre of the river front quite</td>
</tr>
<tr>
<td>1823-5</td>
<td>Sir R. Smirke</td>
<td>altered after the accident in 1826. Length 464 feet.</td>
</tr>
<tr>
<td>1826</td>
<td>D. Laing</td>
<td></td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>The finest copy of Athenian Ionic.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Nash and Biore</td>
<td>Hexastyle, Ionic portico; extent of front 390 feet.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Tetraestyle Ionic portico.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Architect</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1888-9</td>
<td>Sir R. Smirke</td>
<td>Grecian Doric.</td>
</tr>
<tr>
<td>1808-9</td>
<td>Sir R. Smirke</td>
<td>Roman Corinthian.</td>
</tr>
<tr>
<td>1811-12</td>
<td>B. Wyatt</td>
<td>Hexastyle, Grecian Doric portico attached to a polygon</td>
</tr>
<tr>
<td>1818</td>
<td>Nash and Repton</td>
<td>130 feet diameter.</td>
</tr>
<tr>
<td>1821</td>
<td>J. Lewis</td>
<td>Length 920 feet.</td>
</tr>
<tr>
<td>1826</td>
<td>B. Wyatt</td>
<td>Florid Grecian Ionic; facade small, but of rich design.</td>
</tr>
<tr>
<td>1829-79</td>
<td>J. Lewis</td>
<td>Chapel Gothic; the rest Old English Domestic.</td>
</tr>
<tr>
<td>1829-79</td>
<td>D. Laing</td>
<td>Later Gothic.</td>
</tr>
<tr>
<td>1829-79</td>
<td>R. C. Cockerell</td>
<td>Gothic.</td>
</tr>
<tr>
<td>1825</td>
<td>Sir R. Smirke</td>
<td>Portico tetraestyle, with square pillars.</td>
</tr>
<tr>
<td>1827</td>
<td>Sir R. Smirke</td>
<td>Façade not completed; decastyle portico, and dome.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Grecian Doric, with pleasing originality of design.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Hexastyle, Tivoli Corinthian on a basement.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Grecian Ionic hexastyle.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td></td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Its bas-relief frieze the only specimen in London.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Italian; magnificent, yet somewhat heavy, and base-</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Greco-Corinthian, distyle in antis. [ment poste.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Gothic; handsome Louvre tower.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Total height, including statue, 137 ft. 9 in.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Greco-Italian, with pendente domes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Architect</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Choice specimen of the best Italian style, particularly the design of garden front.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>One of his chaste productions. Style, Italian.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Style Tudor, white brick and stone; central tower of rich design.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Style Elizabethan, red brick and stone.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Italianizd Grecian.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Style a modified Italian; bas-relief panels.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>A Grecian Doric propyleum on an imposing scale.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Style modified Italian; singular but pleasing.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Style Italian; interior rich and tasteful.</td>
</tr>
<tr>
<td>1829-79</td>
<td>Sir R. Smirke</td>
<td>Italian.</td>
</tr>
</tbody>
</table>
The corporation of London consists of the whole body of the citizens or freemen, under the style of 'Mayor, Commonality, and Citizens,' viz.—

Lord-mayor
Aldermen, in addition to the Lord-mayor 25
Common-councilmen 246

Officers of the Corporation.
The Sheriffs, who are jointly sheriff of Middlesex, Recorder.
Town-clerk.
Common-serjeant.
Judge of the Sheriffs' Court and Assistant Judge of the Central Criminal Court.
The four Common Pleaders.
The two Secondaries.
The two Under-sheriffs.
Clerk of the Chamber.
Remembrancer.
Solicitor and Clerk Comptroller of the Bridge House.
Coroner for London and Southwark.
Clerk of the Peace.

Divisions. The City of London is divided, for ecclesiastical objects and for the management of the poor, into 98 parishes within the walls, and 11 without the walls. For municipal purposes the City is divided into 56 wards, each of which is in some respects a separate community. The alderman and common-councilmen, who are chosen to represent the ward (as hereafter explained) in the City parliament, form likewise a ward council, and they have the control of many of its local affairs. In most of the wards there are hence much of sheriff. The four sheriffs are elected by the livemans in common-hall, and of those two, one is selected, usually the senior alderman, by the court of aldermen. He enters upon the duties of his office on the 9th November following: if he refuses to serve, he must pay a fine of £100. The lord-mayor chooses a deputy to the lord chancellor, who signifies the assent of the crown to his election. He must also be presented, on the day on which he enters on his office, to the barons of the exchequer, when he takes the oath of office. The salary and allowances paid to him from the city funds during the year of his election amount to 6422l. 8s. 4d., in addition to which he receives sums from various sources which raise the official income to about 7900l. The expenses, chiefly arising from a sumptuous hospitality, usually exceed the income by about 4000l. He resides during the course of office in a mansion-house which is handsomely furnished, and provided with plate and jewelled ornaments said to be worth from 20,000l. to 30,000l.

The functions of the lord-mayor are multifarious. A great part of his time is occupied by magisterial duties. He presides over the courts, almshouses, and common-hall.

The Lord Mayor is selected on the 29th September in each year, from among those aldermen who have served the office of sheriff. The court of aldermen chooses a deputy from among the common-councilmen of the ward. Every alderman is a justice of the peace for the city of London, and one of them attends, by a rotation among the body, for a week at one time in the Justice-room at the Guildhall, for the business of magistrates, and in some cases where two magistrates are required to determine any case at the Mansion-house, this sitting alderman proceeds there, and joins the lord-mayor for the purpose.

The common-councilmen are elected annually on St. Thomas's day, at the same time as the lord-mayor, and in the elections of aldermen. The number elected varies in the different wards, but not in proportion to their extent and presumed importance, the smallest number in any ward being 4, and the greatest 17. Any qualified freeman may be elected, and for this purpose the franchise is disfranchised for not serving, but such cases seldom or never occur. The common-councilmen do not meet in any court exclusively of their own, their sittings being always under the presidency of the lord-mayor and attended of right by the aldermen. The title of the court of common-council is 'the Lord Mayor.'
Aldermen, and Commons of the city of London in Common Council assembled. To constitute a court there must be present the lord-mayor or some alderman, his locum tenens, two other aldermen at least, and as many common councilmen as, with the lord-mayor and aldermen present, shall make up the number of 40. The senior law-officers of the city have seats in the court, but have no vote, and do not speak unless called upon to do so. Of late years the public has not infrequently been excluded, but this is the exclusive, by the motion of any member of the court. There are usually about 12 ordinary meetings of the court in the year. The lord-mayor may at any time call the members together, and on a requisition from a moderate number of members he shall have a meeting of the court. The court has unlimited power of applying the funds of the corporation, and full legislative authority in all municipal matters, where not restrained by statute. The members of the court are several nominating members of the corporation, and thus possess certain privileges and give functional. Orders of the city cannot be applied to any instrument but by order of the court of common-council, which thus reserves power over the disposition of the landed property belonging to the corporation.

The two sheriffs are chosen annually by such of the freemen as are livereyns of some of the city companies. Every alderman who has not served the office is put in nomination as a matter of course. The lord-mayor, being by virtue of his office and certain of the council, may put a nomination any number of freemen not exceeding nine. Any person thus nominated remains on the list until he is elected or has paid the fine of 400l. and 20 marks for not serving the office; and on the day of election, Midsummer-day, the sheriff may put any person in the office. A person is not called to serve the office twice. The sheriffs attend the lord-mayor at state occasions and at every court of aldermen. They present the petitions of the court of aldermen or common-council to the House of Commons, and are the bar of the House of Commons. In the cases of addresses to the crown they attend at court for the purpose of learning when the address will be received. They attend the common-hall at elections to take the votes. They are the returning officers of the members of the House of Commons for the city of London. The sheriff and the under-sheriff of Middlesex, at the direction of the court of common-council, hear the addresses to the crown and the addresses in criminal cases within the city. They have the superintendence of prisons within the city, and present reports concerning their state at every court of aldermen. The sheriffs receive from them a payment from the city of 250l. per annum, and they have a few incidental emoluments which one year with another raise the income to 1000l. for the two. On the other hand, the state which they are expected to maintain is the removal of addresses and of the way in which they are called and the sheriffs being by vice and virtue of an existing bye-law an inchoate right to the freedom of the corporation, and is admitted on proving their qualification and on payment of certain fees. Within the last five years however the ancient practice has been resumed, admitting to the freedom all resident householders who pay, by vote of common-council, without being members of any company, the sum of 20l. called a livery, that is, a part of their body, under the name of livemen, if they be freemen of the corporation, with privileges which other freemen do not possess, such as the privilege of admissibility to the court of common-council and the exemption of them exclusively by an act of Geo. II. The following is an exhibits the names of the companies, stated in their order precedence. The first twelve are called the Twelve Great Companies. The names in Italics are those of extinct companies:

1. Mercers
2. Grocers
3. Drapers
4. Armourers
5. Goldsmiths
6. Skinners
7. Merchant Tailors
8. Haberdashers
9. Brewers
10. Ironmongers
11. Vintners
12. Cloth-workers
13. Dyers
14. Bakers
15. Leather-sellers
16. Pewterers
17. Barbers
18. Cutlers
19. Hatters
20. Wax-chandlers
21. Tallow-chandlers
22. Armourers and Brazen
23. Gilders
24. Gilders
25. Saddlers
26. Carpenters
27. Cordwainers
28. Painters-stainers
29. Masons
30. Plumbers
31. Innholders
32. Founders
33. Founders
34. Founders
35. Founders
36. Cooper
37. Bricklayers
38. Bricklayers
39. Bricklayers
40. Blacksmiths
No company on the foregoing list, with the exception of the Carmen, is now exclusively composed of persons from either of the two greater parties. Apothecaries' companies are in some way connected with the sale of drugs or the practice of medicine; and the greater part of the Stationers' company in the trade connected with the sale of books. The livery was in former times granted only to persons of the profession. A great number of the aldermen, passed in 1697, direct that no person should be allowed to take upon himself the clothing (or livery) of any of the twelve companies, those which stand at the head of the foregoing list, unless he have the livery of one or both of the companies; but, with some few exceptions, it is open to any freeman to take up the livery of any company upon payment of its regular fees or fines. When the freedom is claimed on the ground of patronage or servitude, the fines are usually limited to a few pounds, or even to a few pounds and a small fine; such as the Livery of the Watch-makers, and the Livery of the Apothecaries.

2. Those which have power to search for defective wares, or to prove or mark the article, or to execute any legislative enactment passed for regulating the trade. In this class there are now only the Apothecaries, Stationers, Gun-makers, and Fouriers, which last has the privilege of testing and marking weights.

3. Those which persons carrying on certain occupations in the City are compelled to enter, which class includes an estate in the first and second class.

The management of the affairs of these companies is entrusted to certain senior members of the livery, who form what is commonly called 'The Court of Assistants,' and which usually consists of a master, a senior warden, a junior warden, and six assistants, who succeed in due rotation to the higher offices of the court. Many of the companies possess extensive estates and other property, which is applied in part to the relief of decayed members of their own body and their families, and in part to more permanent objects. The Court of Assistants is an institution of charity which is generally done to the city of London, with a view to the support of the poor and the relief of distress. It is maintained by the sale of lands and money, which have been appropriated by the Donors to charitable objects, and, among such objects, to education. These companies are however no part of the corporation of London, but have many of them their own charters of incorporation.

The City returns four members to the House of Commons. The right of election is in the freemen, being liverymen, and the inhabitant householders occupying dwellings of 10l. yearly value. The numbers of electors registered in these two classes in 1836 and 1857 were as follows:—

Number of householders 10,322
Freemen, being liverymen 9,184
Together 19,456

It is probable that some of the above are registered in their double capacity, and thus swell the apparent number of electors. The number that polled at the general election (on which occasion the same individual can appear in one character only) of 1837, which was severely contested, was—

Householders 5,799
Freemen, being liverymen 5,778
Total 11,577

Production.—That London is not commonly considered as a manufacturing town is owing to the more important aspects under which it presents itself, and not because of the absence of manufacturing industry. Manufacturers of almost every kind of material and object are found in the metropolis, and upon a scale of great magnitude; the best workmen in almost every branch of handicraft being certain of finding employment in London at the highest rate of wages. London was for a long time the only seat of the English broad side and silk trade, which was carried on extensively as formerly, and perhaps to a greater extent than ever, although Manchester, Macclesfield, and other towns have now become rivals in that branch of industry. Linen, woolen, and cotton fabrics are not made in or about London.

The largest breweries, distilleries, and sugar-refineries in the kingdom are in the metropolis. The manufacture of metals in almost every branch is carried on to a vast extent. It is true that a great part of the hardware and cutlery manufactured for common use is produced in Birmingham and Sheffield, which likewise supply the greater part of those articles required for exportation, because of the lower prices at which they can be there produced; but when an article is of a kind more considered, and superiority of quality is desired, the London workmen are em- ployed. Almost every kind of machinery, from the smallest wheels required by the watch-maker to the most powerful steam-engines, are made in London. The making of gold, and silver articles, of optical and surgical instruments, tools of the best quality, and musical instruments, gives employment to numerous hands. Ship-building, with all its accessories, rope-makers, mast-makers, block-makers, anchor-smiths, &c., has always been actively prosecuted. There are also numerous chemical works on a large scale, tanneries, soap-manufactures, potteries, and dye-houses. Male and female clothing of all descriptions is made, not merely for the use of the inhabitants of the metropolis, but for the supply of wealthy persons in various parts of the kingdom, and even of the British colonies. London is also the great workshop of literature, science, and the arts. The number of books printed and published in all other parts of England is small in comparison with what is produced in London. The number of men employed as compositors in London is estimated at 20,000; there are also 500 apprentices, and 1000 pressmen, in addition to those who superintend the working of the great printing-machines, and whose number has not been ascertained. In the extent to which it has now reached, the mechanical part of the labour of producing books and periodical publications in London may well be considered a manufacture. It has been computed by a bookseller long conversant with one great branch of publication—that of periodical works—that the number of suites in weekly periodicals is more than 20,000l. and that the number of parcels containing periodicals despatched into the country in various directions on one day is more than 25,000. The number of weekly publications (not newspapers), about fifty in number, of which about ten millions of copies are sold in the course of the year. Of newspapers there are eleven published daily, six in the morning, and five in the evening. There besides are about thirty-eight which appear at other intervals of time, some three times and some twice a week; others on alternate weeks, and one or two monthly. The number of newspaper stamps issued for London publications between 15th September, 1833, and 15th March, 1834, was—
The following statement of the quantity of wheat and flour brought into the port of London in each year from 1820 to 1838 contains the only information that can be given concerning the consumption of bread in the metropolis, but must not be taken as an accurate test of that fact. In ordinary seasons the great bulk of it is received for the use of the metropolis and surrounding district, but in addition to the quantities thus recorded a great deal of flour is brought by land-carrige from the adjoining counties, which does not pass through the books of the custom-house. Hence the great fluctuations in the quantity, with its seasons of scarcity, when grain is brought from abroad, make that figure in the returns of the port is afterwards transmitted to other parts of the country. In order to render the following figures as useful as possible in a comparative point of view, the number added characteristically to each season.

<table>
<thead>
<tr>
<th>Year ending 31st October,</th>
<th>Wheat</th>
<th>Flour</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820-26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1820-21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1822-23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1824-25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1826-27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1828-29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1830-31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1832-33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1834-35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1836-37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1838-39</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Some abatement from the above quantities, but in what proportion cannot be stated, must be made before we can ascertain the actual consumption of the metropolis, because many persons who reside beyond its limits procure supplies from wholesale dealers.

Police. — Until comparatively a recent period, the police of this metropolis was very defective, although the subject had engaged the attention of the public, and had been investigated by numerous committees of the House of Commons at least fifty times. The first remarks on the Police of the Metropolis, published by Mr. Colquhoun in 1797, revealed such dreadful scenes of depravity as powerfully engaged the public attention; and to that work may in a great measure be attributed the reforms which have subsequently been made. During this period, the districts of the police when Mr. Colquhoun's work was published, it was not worse than it had been for some centuries. As recently as the beginning of the eighteenth century it was highly dangerous to venture abroad, alone and unarmed, after dark, in the most respectable parts of the town; and in 1728 a plan was formed for robbing the queen in St. Paul's Churchyard, as she returned from supper in the city to St. James's; but the gang being engaged in robbing Sir Gilbert Heathcote, an alderman, on his return from the House of Commons, was dispersed from the road, and the loss of life and property recorded. It was not until 1797 that the streets of this town, and the roads leading to it, will shortly be impassable without the utmost hazard; nor are we threatened with seeing less dangerous gangs of rogues among those who frequent thenowat village lanes, than we were before. What indeed may not the public apprehend when they are informed, as an unquestionable fact, that there are at this time a great gang of rogues, whose number falls little short of a hundred, who are incorporated in one body, of which some are sentry, and have learned the regularities of the suburbs an efficient police ensures personal safety at all hours of the night. The vice which still exists is of a less obstructive character, and crimes are now fewer, although frequent, the number of the young and boys have been reduced to a minimum. The establishment of the metropolitan police force, under an act of parliament in 1829, has been largely instrumental in producing this improvement. The regulations for its management are very strict, the penalties for the punishment of crimes of violence have been among the gravest charges made against the system which superseded that men were punished for crimes. Until the length to which they proceeded produced the offer of rewards for their apprehension.

The police force is under the management of two commissioners, who are in direct communication with the secretary of state for the home department; under the commissioners are 17 superintendents, 70 inspectors, 342 sergeants, and 2968 constables. The district under their care extends from Reid Bridge on the river west, to the river east, from the north, to the north, Streatham and Norwood on the south, excluding the city of London. The population of this district, at the census of 1831, was 1,483,019 souls, and the number of houses assessed for the relief of the poor was the same, in 1837, amounted to 1,405,774, or 3,117.3d. per annum. The constables and officers must be men of good character, who can read and write, and who at the time of their appointment are not more than thirty-five years of age. They wear a uniform dress, and are allowed a fine and respectable-looking body of men.

The whole district is parcellled out into seventeen divisions, to each of which one superintendent and an adequate number of sergeants and constables are appointed; and it is expected that each constable will exert himself to acquire a complete personal knowledge of his district. The system of responsibility throughout the force is such that the commissioners are answerable to the government for the due performance of their duties; the superintendents are answerable to the commissioners for their own conduct, and that of the sergeants and constables in their division; and the latter are answerable to the superintendent for the good conduct of the constables under their orders. The constables and officers are strictly forbidden to receive any payments or gratuities from private persons. The expense charged on the police for the whole year is $2,162,000; the expenditure is borne out of the parish rates, limited as above mentioned; and the remaining one-fourth is paid by the Treasury. The efficiency of the metropolitan police may in part be seen from the statement of the number of persons taken into custody by its constables the last year since it came fairly into operation, and which were:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Persons Taken into Custody</th>
</tr>
</thead>
<tbody>
<tr>
<td>1830</td>
<td>2,101,474</td>
</tr>
<tr>
<td>1831</td>
<td>2,162,000</td>
</tr>
<tr>
<td>1832</td>
<td>2,222,500</td>
</tr>
<tr>
<td>1833</td>
<td>2,283,000</td>
</tr>
<tr>
<td>1834</td>
<td>2,343,500</td>
</tr>
<tr>
<td>1835</td>
<td>2,404,000</td>
</tr>
<tr>
<td>1836</td>
<td>2,464,500</td>
</tr>
<tr>
<td>1837</td>
<td>2,525,000</td>
</tr>
</tbody>
</table>

The total number of persons charged with offences by the metropolitan police force in the year 1835 was 71,000, of whom 48,742 were accused of petty offences, and the remaining 23,060 of crimes usually tried before a jury. Of these numbers 29,057 in the first class, and 14,020 in the second class, or about one-half, were discharged on a hearing by the magistrates, only 2,951 were committed for trial, 15,676 were discharged on payment of fines—chiefly cases of drunkenness, and the remainder were sentenced summarily by the magistrates to various short periods of imprisonment.

Among the persons committed for trial, 5 were accused of murder, 16 of manslaughter, and 88 of burglary and house-breaking: the others were charged with larcenies, breaches of the peace, and other offences of the like description.

It will be seen that a large proportion of the persons included in these numbers were taken into custody by reason of their being drunk, in which condition they hold out temptation to dishonest persons, and require to be proscribed.

It has been mentioned that this police force has no authority within the City. The day and night police in the City were till lately established on two systems wholly unconnected with each other. The day police was under the control of a committee of the lord aldermen, and its operations embraced the whole city without any reference to its division into wards, while the duty of providing the nightly watch was left to the ward authorities, each ward supporting an independent establishment of its own. The day and night police are now consolidated, and consist of:

1 Superintendent.
12 Inspectors.
50 Sergeants.
438 Constables.

It is organised as nearly as possible on the plan of the metropolitan police, the City being divided for this purpose into 6 districts. There are besides, connected with the business of the three city halls, four men specially called police officers, and three men placed at the Mansion-House and Guildhall: the whole of this force is directed by the superintendent. Its duties are confined to the north side of the Thames, Southwark being under the metropolitan force.
There are further provided for preserving the peace of the metropolis, nine police offices, each of which has attached to it three magistrates. The offices are—

Bow Street, having attached to it 10 officers. 
Queen Square, 6
Marblestreet, 7
Marylebone, 6
Hatton Garden, 6
Worship Street, 7
Whitechapel, 7
Union Hall, 8
Thames Police, 6

In addition to this there is a River Police attached to the Thames Police Office, and employing 29 Thames police officers, week upon week, for the expense of these establishments is £6,724. 5s. 5d. per annum. The horse-patrol was attached to the office in Bow Street until October, 1836, when it was made part of the metropolitan police force; it comprises a conductor, 4 inspectors, and 56 patrolmen. Their sphere of action is in the less frequented roads around the metropolis. Their respective beats and the hours of visiting different localities are continually being changed, according to the directions of the superintendents of police.

The sessions of the peace for the city of London are held eight times in the year. The judges are the lord-mayor, aldermen, and recorder, any four of whom form a quorum, but the recorder is the acting judge. Before the establishment of the Central Criminal Court the jurisdiction of the Central Criminal Courts was limited to the trial of offences, into felonies, but in practice all crimes (except treason) which were capital by common law and all which have been called felonies by statute were tried at the Old Bailey sessions. The Central Criminal Court has twelve sessions a year, and the Court was established for the trial of offences committed in the city of London, the county of Middlesex, and those parts of the adjoining counties which lie within the parishes of Barking, East Ham, West Ham, Little Ilford, Low Layton, Walthamstow, Wanstead, St. Mary Woolnoth, and Clapton, including the boroughs of Walthamstow, Lee, Lewisham, Greenwich, Woolwich, Eltham, Plumstead, Deptford, Kidbrooke liberty, and Nottingham hamlet, in Kent; Southwark, Battersea, Bermondsey, Camberwell, Crouch End, Clapham, Lambeth, St. Mary Newington, Rotherhithe, Bermondsey, Tabard, Tabard Street, Wandsworth, Merton, Mortlake, Kew, Richmond, and Wimbrolden, in Surrey. This new criminal court was established in 1834, under the act 4 and 5 William IV., c. 36, and empowers the lord-mayor of London, the lord chancellor, the judge or recorder of the city of London, and such other as his majesty may appoint to be judges of a court to be called the Central Criminal Court. These judges or any two of them may determine all such treasons, murders, felonies, and misdemeanours as might be determined on before any Central Criminal Court, and for the city of London or county of Middlesex, or commission of gaol deliver to deliver the gaol of Newgate, at such times and places in the said city or suburbs thereof as by the said Commissioners shall be appointed. The district thus described is to be considered as one county for all purposes under the act. The juries are summoned from London, or from the counties, or from both indiscriminately. The sessions thus authorised are to be held twelve times at least in every year. This court is further empowered to commit persons for offences committed on the high seas and other places within the jurisdiction of the admiralty of England, for which separate sessions used formerly to be held by the judges of the admiralty court. The great bulk of the cases brought before the Central Criminal Court are in connection with actions of assault and battery, accompanied by violence. The frequency of the sessions is found to be a great improvement; persons who may be wrongfully accused are speedily released, and the guilty are more quickly brought to justice.

The following are some persons for the confinement of offenders within the metropolis. These are—

1. The Gaol of Newgate
2. The Guildford Street Comptor
3. The Bridewell Prison
4. The New Prison, Clerkenwell, Middlesex Gaol
5. Woolwich, County House of Correction
6. The Westminster, County Bridewell
7. The Horsemonger Lane, Surrey County Gaol
8. The Borough Comptor
9. The Penitentiary at Milebank

The Gaol of Newgate is under the control of the Corporation of London, and is the principal prison appropriated to the reception of persons brought before the Central Criminal Court. This prison has at various times been stigmatised as one of the worst in the kingdom, and although various reformations have been attempted, little effectual good appears to have been thus accomplished. In the third Report of the Inspectors of Prisons, presented to Parliament in 1836, it is stated 'that this great metropolis prison is in constant and open communication with the rest of the metropolis, and a fruitful source of demoralisation, and a standing reproach on the character of the Corporation of the City of London.'

The more heinous classes of offenders are placed in separate cells which are not warmed, have no privies, and are without warming for the winter. The said Commissioners of Prisons in their Report have recommended the adoption of a uniform dressing for prisoners, a requirement which was embodied in the tenor and subject of the Prayer Book. The numbers of persons confined in this prison in the course of the year ending Michaelmas, 1837, was 3349, of whom 902 were females. The greatest number at any one time in that year was 548, of whom 138 were females. The current expenses of the prison for the year amounted to 7785. 15s. 1d.

The Guildford Street Comptor is under the jurisdiction of the Lord Mayor and Court of Aldermen. Prisoners of every description and character are crowded together in the wards, yards, and sleeping cells of this prison without any possibility of classification, and, as we find it stated in the last Report of the Inspectors of Prisons, 'The Guildford Street Comptor continues a wretched prison, with so many defective arrangements as tend to render the numbers which are committed there together in large numbers in idleness and unrestrained communication during the whole 24 hours. The number of prisoners confined there in the course of the year 1837 was 552 males and 130 females; the greatest number at any one time was 345 males and 103 females; the current expenses of the prison for the year amounted to 3765. 10s. 2d.'

The Bridewell prison is under the jurisdiction of the governors of Bridewell and Bethlehem Hospitals, and is used for the reception of persons summarily convicted by the lord mayor or sitting aldermen. The prisoners are for the most part petty offenders, and vagrants. The refractory apprentices brought before the aldermen or chamberlain of London are also sent here to solitary confinement for short periods. The prisoners were formerly employed, as a punishment, in beating hemp, which occupation has been discontinued. The prison is in a state of great dilapidation, and the buildings are in a state of disrepair. The inmates are classified, and the silent system has been adopted. There were confined in this prison in the year ending Michaelmas, 1837, 776 males and 252 females; the greatest number at any one time was 99 males and 20 females; the current expenses of the prison for the year amounted to 3765. 10s. 2d.

The new prison, Clerkenwell, is the general receiving prison of Middlesex for offenders committed, either for examination before the police magistrates, or for trial at the central criminal court, and for such as it may be desired to retain in gaol pending the further proceedings of conviction. Some degree of classification has latterly been attempted, but as the limits of the prison oblige 30, 40, or more prisoners to remain together in a small room, the division must be more nominal than real; the attempt is indeed limited to marking the divisions on a plan, in which certain classes are desired to remain. The number confined in the year ending Michaelmas, 1837, was 4265 males and 2954 females, but the greatest number at any one time was 205 males and 130 females; the expenses for the year amounted to 3765. 10s. 2d.

The Coldbath-fields County House of Correction is under the jurisdiction of 14 visiting magistrates appointed at each quarter-sessions: four go out of office quarterly by rotation, and are succeeded by four others. This prison is placed under the section of rogues and vagabonds. It contains a tread-wheel. The prisoners are kept separate in classes in the different wards, and the silent system is strictly enforced. The discipline is secured by occasional visits of the heads of the gaols. The number of prisoners confined in this prison in the year ending Michaelmas, 1837, there were confined 6625 males and 3125 females; the greatest number at any one time having been 939 males and 319 females; the expense to the county, exclusive of alterations and repairs, was 13,455. 14s.

The Westminster County Bridewell in Tothill-fields is under the jurisdiction of the magistrates for the City of Westminster. It is a modern building, having been first occupied in 1854: it cost upwards of 200,000l. The prison contains 43 day-rooms and 348 sleeping apartments, ten ad-
diction to 120 dark cells in the basement. The classification of prisoners is accomplished to a great extent. Prisoners who have been convicted are subjected to the silent system. There are two treadwheels in the prison, and two schools have been established, one for boys, the other for girls under 17 years of age, who are committed to the prison. In the year ending at Michaelmas, 1837, there were confined 3085 males and 2439 females; the greatest number at any one time was 456, of whom 159 were females. The curfew is introduced.

The Surrey County Gaol, in Horsemonger Lane, Southwark, is under the jurisdiction of the sheriff, court of quarter sessions, and 12 visiting magistrates of the county of Surrey. This prison contains debtors as well as criminals of the most flagrant and injurious character. The system practised in this prison is to confine debtors to any useful end. In the course of the year, to Michaelmas, 1837, there were in this prison 1193 male and 177 female debtors. Of other prisoners the numbers were 1901 males and 605 females; the greatest number of these at any one time was 293 males and 62 females, together 355. The expense in that year was 3316L. 2s. 2d.

The Borough Compter, in Mill-lane, Tooley Street, is under the jurisdiction of the lord-mayor and court of aldermen of London and has a high-bailiff of Southwark. The prison contains debtors, or persons committed for trial for felonies and misdemeanors, and others tried and sentenced to imprisonment, but not to hard labour; those prisoners who are sentenced to labour are sent to the County Houses, which comprises the officers, the discipline, and management of this prison were strongly animadverted on by a Committee of the House of Commons in 1829, and in their Report of 1838 Inspectors of Prisons remark that its general state is as deplorable at this moment as it was when it was first established. In the year ending at Michaelmas, 1837, there were confined 273 male and 32 female debtors; 688 males and 464 females accused of offences; the greatest number of these at any one time was 69, of whom 23 were females: the expenses of the prison were 587L. 19s. 2d.

The Pentonville Compter, opened in 1829, and placed under the direction of the Secretary of State for the Home Department. It is built upon the plan recommended by the late Mr. Jeremy Bentham, which admits of the most perfect classification and supervision: it cost nearly half a million. The house, which is capable of containing 1100 prisoners, was granted for 21 years by the corporation, of certain lights to be used in the City, from which it may be inferred, that the city authorities in those days derived a revenue from granting the privilege of lighting to private parties, who must of course have taken their remuneration from householders. At the expiration of the lease here mentioned, in 1716, an act was passed by the municipal parliament repealing all former laws upon the subject, and ordering that for the future every housekeeper should hang out a light before his door with sufficient cotton wicks to burn from six o'clock in the evening until eleven of the same night, after which hour the streets were consequently left in darkness. The house was eventually leased to the corporation, who continued the lighting of their street lamps through the whole night after each new moon and the third night after it arrived at the full--an instance of economy which is still practised in many of the provincial towns of this kingdom. Even in those times it was necessary to have a certain light on all other nights was fixed one shilling for each offence. This system proved to be exceedingly troublesome and unsatisfactory; and after a few years a company was established which in return for a payment per householder, for the demand from each householder rated for the support of the poor within the city, engaged to provide a sufficient number of lamps and to keep them lighted from six o'clock until midnight. The company further engaged to pay to the Orphans' Fund a yearly sum of 60L. above mentioned. The maintenance of the light thus provided may be inferred from the numerous degradations then committed in the city by highwaymen, who, riding into the streets after nightfall, perpetrated their outrages with impunity. This evil rose to a height that govern the city necessary to offer a reward of 100l., a large sum in those days, for the apprehension of every highwayman in the city of London or within five miles of the same. After these evils had been endured for some years a further and more effectual improvement was introduced, the contract just mentioned was cancelled, and an act of parliament was procured in 1738, authorising the corporation to set up as many gas lamps as should be necessary, and to keep them lighted throughout the year from the setting to the rising of the sun. To defray the cost of the corporation was empowered to levy an annual rate upon every householder proportioned to the value of his house. This system was found to answer well, and continued in operation until the introduction of gas-lighting. During the 70 years that intervened London enjoyed the reputation of being the best lighted city in Europe, but no person, unless he can remember the nightly appearance of the metropolis previous to the adoption of gas lighting, can be sufficiently aware of the value of the improvement, nor of the degree in which it operates as a measure of police. The lamps are now lighted throughout the year, possessing large capitals, and which are content to derive a low rate of remuneration for the lighting of the street-lamps, in return for the opportunity of supplying shops and private houses, which is the result of the liberal offer made by these gas companies received a charter of incorporation in 1812; it has three stations, one in the Horseferry-road, Westminster, another in Brick Lane, Old Street, and the third in the Curtain Road, Shoreditch, Several other companies have been established since the introduction of these, the City of London, the Imperial, the British, the Independent, and the Equitable gas companies; these supply among them more than 60,000 lights over a field extending from Bow on the east to Brentford on the west, and from the Thames to the north, and the aggregate incomes for these lights, derived from parishes and private consumers, exceed a quarter of a million of money per annum: of this sum the corporation of London pays about 10,000l.

Sewers.-The sewers of the metropolis and adjacent districts, comprehending a circle of ten miles, measured from the Post-Office, are divided into seven trusts, and placed under the management of as many boards of commissioners, viz.:--

1. The City and Liberties of Westminster.
2. Holborn and Finsbury division.
4. The City of London.
5. The Tower Hamlets division.
6. From the river Ravensborne, in Kent, to the river Medway in Surrey.
7. Regent Street division.

There are no means of ascertaining the aggregate length of the sewers throughout these divisions. Those under the commission for the City of London are about 15 miles in extent, and form only a small part of the drainage of the whole metropolis. Sewers were first constructed in London in the reign of Henry VIII, and were under an act (6 Hen. VI. c. 5) passed in 1428. This act was amended by parliament in the reign of Henry VIII; and the law relating to sewers, passed in the twenty-third year of that reign, is still substantially adhered to by two of the boards of commissioners, and the other four by the act of above last; the other five boards are regulated by local acts. The expenses attending upon the construction and management of sewers in the different districts are paid by means of rates levied upon the householders by the discretion of the several boards of commissioners. In the City of London the rate cannot exceed 4d. in the pound on the rental. Much dissatisfaction existed some years ago in regard to the efficiency of the sewerage in different parts of the metropolis. Drains which had been the subject of complaint and of investigation were rendered by degrees wholly inadequate, through the increase of the population. Much has of late years been done to meet this objection; the subject has been investigated by a Committee of the House of Commons, appointed in 1834; and although there are still some obscure corners where the health and comfort of
the inhabitants might be improved by a better attention to the sewers, it may be fairly stated that the drainage and the removal of impurities from London are, upon the whole, satisfactory and has improved. The figures quoted in the City of London district for sewers-rate in 1838 was 12.2144, 8t. 1d.

Fire.—An important part of the police of a city consists in the measures taken for the prevention and extinction of accidental fires. After the Great Fire of London, in 1666, the Great Fire-Office was established, and the Great Fire-Committee was charged with the task of clearing all species of combustibles, in widening the streets and employing bricks for building the houses instead of wood and lath and plaster, which had previously been very generally used. The regulations adopted on that occasion were extended and improved from time to time, and a system of fire-wards was established until 1776, that year an act was passed (14 Geo. Ill., c. 78), commonly called the Building Act, repealing former acts, regulating the mode of building so as to render houses 'ornamental, commodious, and, by providing party-walls of a certain thickness, secure against the accidents of fire.' Under this act it was further rendered incumbent on churchwardens to provide one or more fire-engines in every parish, to be in readiness on the shortest notice to extinguish fires; and also to have in constant readiness ladders to favour the escape of persons from burning houses. It was also made incumbent on the churchwardens to fix fire-plugs at convenient distances upon the main water-pipes within the parish, and to have keys to open the same, so that the water might be instantly made available. Great efforts were made by the same acts to persons bringing the first three parish engines for the extinction of a fire. These measures have since been greatly aided by the various offices for insuring property against fire, which have maintained, at their own charge, numerous fire-engines and corps of firemen. The legislature on its part facilitated the object of the fire-offices of London became generally united for this purpose under a uniform system, each office subscribing towards the expense of the establishment in a certain agreed proportion. Under this arrangement a grand committee of fire-wards was appointed, consisting of one delegate, one from each of the associated offices, London is divided into five districts, three on the north and two on the south side of the Thames, viz.:

North. 1. From the eastward to Paul's Chain, St. Paul's Churchyard, Aldersgate Street, and Goswell-street-road.

2. From the above district to Tottenham-court-road, Crown Street, and St. Martin's Lane.

3. Parts to the westward of the foregoing.

4. From the eastward to Southwark-bridge road.

5. From Southwark-bridge-road westward.

The force employed consists of a superintendent, 3 fore- men, 10 engineers, 9 sub-engineers, 51 senior firemen, 55 junior firemen, and 6 extermisers. Fire-engines in constant readiness is 33, which are kept at 20 different stations in various parts of the metropolis: two are floating engines, kept on the river, one moored off King's Stairs, Rotherhithe, the other off the Southwark Bridge. One quarter of the number employed are day and night, at the engine-houses, and the who are liable to be called upon whenever a fire occurs. The superintendent, who must repair to the spot, wherever it may be, when a fire breaks out, has power to employ any additional number of men that may be wanted. The firemen are uniformly clothed, and have their heads protected with helmets made of hardenable leather; they are provided with the most approved apparatus for the suppression of fires, the rescue of human life, and the saving of property, including ropes and lengths of scaling-ladders capable of being readily connected to any required length. The advantages attending an organised force of this description must be apparent. We have no record of the number of fires that occurred in London during the 18th century, but the present record has since been kept from which the following particulars are taken:

<table>
<thead>
<tr>
<th>Number of Wholly</th>
<th>Severe</th>
<th>Slightly</th>
<th>In which Number of Year's</th>
<th>First</th>
<th>Burnt</th>
<th>Damaged</th>
<th>Damaged Lives</th>
<th>Lost Lives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1834</td>
<td>292</td>
<td>123</td>
<td>93</td>
<td>1834</td>
<td>292</td>
<td>123</td>
<td>93</td>
<td>80</td>
</tr>
<tr>
<td>1835</td>
<td>208</td>
<td>49</td>
<td>45</td>
<td>1835</td>
<td>208</td>
<td>49</td>
<td>45</td>
<td>44</td>
</tr>
<tr>
<td>1836</td>
<td>224</td>
<td>53</td>
<td>35</td>
<td>1836</td>
<td>224</td>
<td>53</td>
<td>35</td>
<td>60</td>
</tr>
<tr>
<td>1837</td>
<td>105</td>
<td>20</td>
<td>15</td>
<td>1837</td>
<td>105</td>
<td>20</td>
<td>15</td>
<td>10</td>
</tr>
</tbody>
</table>

An organised force of this description must be apparent. We have no record of the number of fires that occurred in London during the 18th century, but the present record has since been kept from which the following particulars are taken:

Revenues, &c.—The revenue of the City of London is derived from various sources, the principal of which are rents of premises, dues, and market-tolls. The receipts and expenditure for the years 1831 and 1832, as given in to the Municipal Corporation Commissioners, were as follows:

<table>
<thead>
<tr>
<th>Receipts</th>
<th>1831</th>
<th>1832</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rents and quit rents</td>
<td>45,300</td>
<td>45,000</td>
</tr>
<tr>
<td>Rents and navigation of Thames</td>
<td>1,249</td>
<td>1,165</td>
</tr>
<tr>
<td>Flats for leases</td>
<td>7,712</td>
<td>7,141</td>
</tr>
<tr>
<td>Flats for offices, and unities</td>
<td>8,563</td>
<td>8,276</td>
</tr>
<tr>
<td>Brokers' rents and admissions</td>
<td>3,065</td>
<td>2,972</td>
</tr>
<tr>
<td>Freedoms and dues</td>
<td>4,198</td>
<td>4,110</td>
</tr>
<tr>
<td>Bills</td>
<td>12,174</td>
<td>12,095</td>
</tr>
<tr>
<td>Cash in hand</td>
<td>21,119</td>
<td>20,735</td>
</tr>
<tr>
<td>Interest on government securities</td>
<td>1,993</td>
<td>1,862</td>
</tr>
</tbody>
</table>

Expenditure:

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>1831</th>
<th>1832</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orphans' Fund</td>
<td>12,074</td>
<td>12,100</td>
</tr>
<tr>
<td>Rents and quit rents</td>
<td>4,871</td>
<td>4,671</td>
</tr>
<tr>
<td>Miscellaneous expenses</td>
<td>1,521</td>
<td>1,510</td>
</tr>
<tr>
<td>Rent and navigation of Thames</td>
<td>1,293</td>
<td>1,520</td>
</tr>
<tr>
<td>Expenses of magistrates, police, and prisons</td>
<td>28,158</td>
<td>28,700</td>
</tr>
<tr>
<td>Conveyance of river Thames</td>
<td>3,918</td>
<td>3,725</td>
</tr>
<tr>
<td>Charges of the office of the Sheriff</td>
<td>1,161</td>
<td>1,184</td>
</tr>
<tr>
<td>Market charges</td>
<td>5,285</td>
<td>5,191</td>
</tr>
<tr>
<td>Expenditure on public buildings</td>
<td>1,020</td>
<td>1,099</td>
</tr>
<tr>
<td>Stocks</td>
<td>25,213</td>
<td>24,945</td>
</tr>
<tr>
<td>Grants</td>
<td>11,426</td>
<td>23,600</td>
</tr>
<tr>
<td>Royal and common entertainments</td>
<td>3,955</td>
<td>1,727</td>
</tr>
<tr>
<td>Newspapers</td>
<td>2,980</td>
<td>2,611</td>
</tr>
<tr>
<td>Bills</td>
<td>8,000</td>
<td>8,000</td>
</tr>
<tr>
<td>Wages and salaries</td>
<td>12,900</td>
<td>12,900</td>
</tr>
<tr>
<td>Taxes owing</td>
<td>39,942</td>
<td>39,942</td>
</tr>
<tr>
<td>Salaries and allowances</td>
<td>4,190</td>
<td>4,190</td>
</tr>
<tr>
<td>Purchase for lord-mayor's household</td>
<td>5,295</td>
<td>5,295</td>
</tr>
<tr>
<td>Balance in hand</td>
<td>26,272</td>
<td>26,272</td>
</tr>
</tbody>
</table>

The first item in the above statement of expenditure requires some explanation. The court of the lord-mayor and aldermen of London had from time immemorial acted as the guardians of the children of deceased debtors, and as trustees of their property. The corporation having advanced large sums to the government upon the security of Exchequer Talties, which were totally lost to them upon the shutting of the Exchequer in 1672, this circumstance, with the losses occasioned by the Fire of London, occasioned a deficiency in the sum owing to its creditors and other creditors of 747,472l. An act was accordingly obtained (5 and 6 Will. and Mary, c. 101, entitled 'An Act for the relief of the Orphans and other Creditors of the City of London,' in the preamble of which the above-mentioned deficiency is attributed to 'sundry accidents and public calamities, which act established a fund for the repair of such works as are occasioned by the fire, but which interest for ever was declared to be in full satisfaction of the debt. The fund created consisted of a charge of 800l. per annum on the lands and revenues of the city; the profits of the repair of the right of lighting water in the city over 2,000l. per annum to be levied by assessment on the habitable householders: 600l. per annum arising from the lease granted of the right of lighting lamps, as before explained; a tax of 2c. 6d. on each pew, 6d. on each person admitted to the freedom of the city; and 4d. per pew upon wine imported into London; and 4d. per child on the metage of coals; and
The last tax was to commence in 1700, and to continue for 50 years; after which the lands of the city were to be charged with 6000l per annum, in favour of the orphan's fund. In 1827 the coal-tax was renewed for 35 years; and it was afterwards continued to 1837. The debt for which these charges were originally made was fully discharged in 1826, the duties imposed having been rendered unnecessary by the increased facilities which were expected, owing to the great increase of the city; but it was found convenient to continue them in order to provide for the discharge of debts otherwise and subsequently incurred for various buildings and improvements, among which may be mentioned Blackfriars Bridge, Newgate prison, the Middlesex sessions-house, and improvements at Temple Bar and Snow Hill. More recently the coal duties have been continued on account of a million of money borrowed to make suitable approaches to the new London bridge.

The total produce of the various charges and duties authorized by the act of 1694 produced between that year and 1829 is as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payments from city revenues</td>
<td>125,426</td>
</tr>
<tr>
<td>Aqueducts</td>
<td>42,441</td>
</tr>
<tr>
<td>Assessments on inhabitant householders</td>
<td>263,507</td>
</tr>
<tr>
<td>Lights</td>
<td>21,000</td>
</tr>
<tr>
<td>Apprentice bindings</td>
<td>35,375</td>
</tr>
<tr>
<td>Freedoms</td>
<td>41,250</td>
</tr>
<tr>
<td>Duty on wine</td>
<td>363,442</td>
</tr>
<tr>
<td>Meule and duty on coals</td>
<td>3,718,059</td>
</tr>
<tr>
<td>Sale of ground, &amp;c.</td>
<td>30,975</td>
</tr>
<tr>
<td></td>
<td><strong>£6,820,101</strong></td>
</tr>
</tbody>
</table>

The passing of the bill through parliament (1694) to authorize the levying of these duties was accompanied by an extraordinary circumstance. Considerable delay having been experienced in the proceedings of the House of Commons, the city chamberlain was authorized to discharge such sums as should be expended in the meantime. Through the want of caution the government came to suspect that bribery was used, and a committee of the House of Commons was appointed to investigate the matter, it came out that the Speaker had actually received 100 guineas for his services in expediting the bill through the house, and that two other members had been guilty of similar corruption. The three were consequently forthwith expelled from the house.

The freehold estates belonging to the corporation within the city are situated chiefly about Bond Street, Fleet street, and the Minories. It has also a considerable estate in the parish of St. George's, Hanover Square, and possesses five-sixths of a leasehold estate under the chapter of St. Paul's. This lease has been held since the beginning of the 17th century, and was refixed in 1819. The net produce to the city arising from ground-rents is 3,200l. per annum, but the annual value which will lapse to the church in 1867 is expected to amount to 50,000l. or 60,000l.

The title of some of the companies are in possession of real property and money in the public funds, but as many of them refuse to state the nature and amount of their property, it is not possible to speak more precisely on the subject. The Drapers' Company made a return to the Municipal Corporation Commissioners, from which it appears that the yearly rents amount to 23,400l.; and the Fishmongers have in like manner stated their income from real property to 17,973l. per annum. It is known that other companies, and particularly the Mercers, Goldsmiths, and Merchant Tailors, hold extensive leases of the property of London, and elsewhere, both for their own use, and on various trusts; but the particulars of these estates are not made public.

The Irish Society is a corporation connected in a peculiar manner with the corporation of London. This origin of the connection was as follows. In the reign of James I. a considerable part of the province of Ulster was forfeited to the crown, and proposals were entertained for establishing an English colony in that province. In pursuance of this scheme articles of agreement were executed in January, 1609, between the lords of the king's council and a committee appointed by the common-council acting on behalf of the mayor and commonalty of the city of London for establishing corporations in Derby and Coleraine. It was arranged that 20,000l. should be advanced by a London company, to consist of a governor, deputy-governor, and 24 assistants; that the governor and five assistants should be citizens of London; that the recorder should be another assistant; and that the deputation should consist of five members who should be citizens of London, to be elected annually by the common-council. The Society, being thus appointed, was soon after put in possession of the estates. The sum subscribed for the purpose amounted eventually to 50,000l., and was called in at the end of the century by the most wealthy of the London companies. 

The Society was incorporated by the act of March 29th, 1619, and the town of Coleraine and the county of Londonderry were granted to the Society and their successors for ever. But by an act of Henry III. in 1662, power was given to the common council of Londonderry to make bye-laws for the government of the city, but to give them validity it was necessary that these bye-laws should be confirmed within a limited time by the Irish Society. The act has been printed and laid before the court of common-council. The estates have been the subject of a suit in chancery, which has confirmed the title of the corporation to all except the lands that have been granted to the companies.

Pensions—Although employment in the colonies cannot be obtained in London by persons in health, and adequate wages are paid, a considerable proportion of these wages are spent in intemperance, which adds largely to the amount of destitution and pauperism. Under the orders of the commissioners for executing the act of 1833 for the amendment of the law relating to the poor, the metropolis, so far as it has hitherto been brought under the provisions of the new poor law, is divided into 26 wards or unions, as follows:

<table>
<thead>
<tr>
<th>Ward</th>
<th>Area</th>
<th>Population</th>
<th>Rate-payers</th>
<th>Poor in 1831</th>
<th>Guardians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holborn Union</td>
<td>42,649</td>
<td>20</td>
<td>£11,597</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>St. George's in the East</td>
<td>38,505</td>
<td>18</td>
<td>11,853</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Leonard's, Shoreditch</td>
<td>68,564</td>
<td>21</td>
<td>17,318</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Martin in the Fields</td>
<td>23,752</td>
<td>24</td>
<td>9,318</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Matthew, Bethnal Green</td>
<td>63,848</td>
<td>22</td>
<td>13,187</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Pancras</td>
<td>103,548</td>
<td>20</td>
<td>19,921</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strand Union</td>
<td>41,820</td>
<td>18</td>
<td>14,494</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bermondsey</td>
<td>29,741</td>
<td>18</td>
<td>10,251</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. George, Southwark</td>
<td>39,769</td>
<td>18</td>
<td>10,936</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camberwell</td>
<td>29,371</td>
<td>18</td>
<td>7,294</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lambeth</td>
<td>87,856</td>
<td>20</td>
<td>24,598</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newington</td>
<td>44,326</td>
<td>18</td>
<td>9,559</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotherhithe</td>
<td>12,675</td>
<td>15</td>
<td>5,261</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Olave, Southwark</td>
<td>70,249</td>
<td>18</td>
<td>3,967</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Saviour, Southwark</td>
<td>31,711</td>
<td>17</td>
<td>11,157</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stepney</td>
<td>72,446</td>
<td>23</td>
<td>26,426</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poplar</td>
<td>25,006</td>
<td>15</td>
<td>10,519</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Edmonton</td>
<td>46,510</td>
<td>38</td>
<td>13,164</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of London (96 parishes)</td>
<td>57,689</td>
<td>38</td>
<td>13,164</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whitechapel</td>
<td>64,114</td>
<td>25</td>
<td>16,426</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greenwich</td>
<td>62,099</td>
<td>20</td>
<td>15,593</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lewisham</td>
<td>18,426</td>
<td>20</td>
<td>5,993</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kensington</td>
<td>79,335</td>
<td>25</td>
<td>16,293</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hackney</td>
<td>74,307</td>
<td>15</td>
<td>3,307</td>
<td></td>
<td></td>
</tr>
<tr>
<td>East London</td>
<td>39,211</td>
<td>20</td>
<td>9,233</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West London</td>
<td>27,825</td>
<td>20</td>
<td>17,922</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Begging is followed as a trade or profession in the metropolis perhaps more systematically than in any other city. The subject has at various times attracted the attention of the legislature, and considerable legislation has been enacted with respect to it by the Reports of committees of the House of Commons. In one of these reports it was stated on evidence that two houses in St. Giles's parish (which is the principal resort of beggars) are frequented by considerably more than 200 persons, who hold in their hands a kind of club, from which all who are not of their profession are excluded; that children are
let out by the day, and that the hire paid for deformed children is sometimes as high as four shillings per day, and that the work is kept from being distributed among more children as is considered too high or too low, according to the views which different persons take of the condition of society. It is ascertained that few of the street-beggars who pretend to be husband and wife are really married. The Mendicant Society for the relief of mendicants has been very popular, and it has been considered that the evil, which is too great in degree to be successfully combated by any merely private association.

Savings' Banks. The various savings' banks that are open within the limits of the metropolis are no doubt resorted to by some persons who reside beyond it; and it is therefore not possible to ascertain with precision the amount of deposits made by the metropolitan population. After a careful examination of all the returns and other documents relating to these savings' banks, it appears that, on the 20th November, 1837, about 97,000 individuals resident within the metropolitan limits who had accounts open at the different savings' banks, and that the sum standing to the credit of their accounts was about 3,450,000l., being 11s. 8d. the total amount of depositors in England, and 15 per cent. of the total amount of their deposits. It is supposed that the class of domestic servants, who are very numerous in London, forms by far the largest proportion of depositors in savings' banks.

Charities, Hospitals, &c. The public charities and hospitals within the limits of the metropolis are very numerous, and many of them richly endowed. The royal hospitals of Greenwich for seamen and of Chelsea for soldiers are national charities, and which depend on the public for support. The revenues of Greenwich Hospital are derived partly from estates in Cumberland, on which lead-mines are profitably worked, and partly from a payment of sixpence per month stopped from the wages of seamen, and in time of war from unclaimed prize-money. In Greenwich Hospital there are usually about 3000 maimed and superannuated seamen, who are boarded, lodged, and clothed, and provided with each one shilling per week pocket-money. There are besides about 32,000 out-pensioners receiving various allowances, and to 15,000 of them. There are officers of state nominally governors of the hospital; but it is really managed by twenty-four directors, a governor, and a lieutenant-governor. Chelsea Hospital, which is for the army, accommodates about 400 in-pensioners, and is managed in the same way. The governors of these hospitals are elected by means of contributions stopped from the pay of every officer and private soldier in the army; the deficiency, if any, being provided for by parliament. The establishment is under the direction of commissioners, a governor, and a lieutenant-governor. Connected with these hospitals are the Royal Naval Asylum at Greenwich and the Royal Military Asylum at Chelsea, the former for the education and maintenance of 800 boys and 200 girls, the children of seamen of the Royal Navy; and the latter for giving the same advantages to both boys and girls, the children of officers of the Navy.

The charities connected with the corporation of London are Christ's Hospital, better known as the Blue-coat School, Bridewell and Bethlem Hospitals, St. Bartholomew's Hospital, and St. Thomas's Hospital, all of which were founded in 1611. Christ's Hospital, which contains about 1200 boys, to whom good classical, commercial, and mathematical instruction is given. They are also boarded and clothed; the annual expenses of the establishment amount to 36,000l. The lord-mayor and corporation of London are directors of Christ's Hospital; there are about 250 governors, each one of whom, at his election to the office, presents 400l. to the institution. The children are admitted on the nomination of the directors and governors, who exercise the privilege in rotation. Bridewell Hospital, which is under the management of the same board of governors as Bethlem Hospital, is now used only as a prison, under which head it is noticed. Bethlem Hospital, first established in 1675 in Moorfields, was removed in 1741 to Saint George's Fields, and is now called the Bethlem Royal Hospital, see BARTHOLOMEW'S HOSPITAL.

St. Thomas's Hospital, in Southwark, is governed by the lord-mayor, aldermen, and 12 common-councillors of London, and 100 governors through donations of 50l. and upwards. It has been a royal hospital ever since the time of King Henry III.; there are about 300 patients, and it is considered as one of the largest and best of its kind in Europe. This hospital was opened in 1721, and is richly endowed by Mr. Guy. A bequest of 200,000l. was made to its funds in 1629 by Mr. Thomas Hesketh, who was a captain of the navy, and medical and legal studies were instituted; the foundation, or the sums of money, was 6d. a day, and the current expenses of the hospital are borne by the governors, who receive advice and medicines gratuitously. There is a medical school attached to this hospital. Other corporations dependent on the governors, or the wardens, are the Corporation of the London Workhouse. The Commission of Sewers, Carpenters' School, &c.; and Gresham College, held in conjunction with the Mercers' company.

The other hospitals of the metropolis have been founded and are supported by private benevolence.

Guy's Hospital, St. Thomas's Street, Southwark, founded 1721, and richly endowed by Mr. Guy. A bequest of 300,000l. was made to its funds in 1829 by Mr. Thomas Hesketh, who was a captain of the navy, and medical and legal studies were instituted; the foundation, or the sums of money, was 6d. a day, and the current expenses of the hospital are borne by the governors, who receive advice and medicines gratuitously. There is a medical school attached to this hospital. Other corporations dependent on the governors, or the wardens, are the Corporation of the London Workhouse. The Commission of Sewers, Carpenters' School, &c.; and Gresham College, held in conjunction with the Mercers' company.

The other hospitals of the metropolis have been founded and are supported by private benevolence.

Charing-Cross Hospital, King William Street, West Strand, established in 1618, erected in 1831, is supported by voluntary subscriptions. It has an establishment of three physicians and two surgeons.

Westminster Hospital, established 1719; the present building was erected in 1833. It is capable of receiving 120 patients.

St. George's hospital, Hyde Park Corner, instituted in 1733. The hospital has been recently rebuilt. There are usually nearly 300 in-patients, besides a considerable number related as out-patients. Four physicians, with an assistant-physician, an equal number of surgeons, two assistant-surgeons, a house-apothecary, and four vacuum-apothecaries are attached to this hospital.

Middlesex Hospital, Charles Street, Oxford Street, instituted in 1745. It was established by Mr. Counsell, and was meant to afford relief to other sick persons. Persons meeting with accidents are admitted at all times without recommendation. This hospital, which has an adequate number of physicians and surgeons, is supported by voluntary contributions and subscriptions.

The University College Hospital, built on ground opposite and belonging to University College, was opened in November, 1834. It contains beds for 130 patients, and is the hospital for the medical school of the College.

All the above hospitals have medical schools attached to them.

Saint Luke's Hospital, City Road, instituted in 1751, i.e. the reception of poor insane persons, being parish paupers or others. With every parish patient a sum of 4l. must be paid to the hospital out. Kents manor, first obtained by John Place, having in connection with it eleven 'vaccinating surgeons' residing in different parts of London and its environs.

London Fever Hospital, St. Pancras, adjoining the Smallpox Hospital, St. Pancras, established 1746, is supported by voluntary contributions. Since 1799 vaccination has been adopted in this hospital, and upwards of 100,000 persons have been vaccinated by its medical officers. There is a medical school attached to this hospital.

Small-pox Hospital, St. Pancras, instituted 1746, is supported by voluntary contributions. Since 1799 vaccination has been adopted in this hospital, and upwards of 100,000 persons have been vaccinated by its medical officers. There is a medical school attached to this hospital.

London Fever Hospital, St. Pancras, adjoining the Smallpox Hospital; St. Pancras, receives at all hours of the day and year from the smallpox and scarlet fever without recommendation. It is supported by
L O N

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The Westminster School, established by Queen Elizabeth in 1590.
St. Paul's School, founded by Dean Collet in 1510.
Merchant Taylors' School, established 1561.
St. Olave's Free Grammar-School, founded by Queen Elizabeth.
Mercers' Free Grammar-School.
St. Saviour's Grammar-School, founded 1662.
British and Foreign School Society.
National Society for the Education of the Poor.
Society for promoting Christian Knowledge, instituted in 1839.
The educational establishments of a public character, but not charitable, are:
University College, London.
King's College, London.
School of the Corporation of the City of London.
The Charter House, founded by Thomas Sutton in 1611, is an hospital which has a school attached to it.
(Charter House.)
The University of London, incorporated in 1837, consists of a chancellors, vice-chancellor, and thirty-six fellows, who are empowered to confer degrees in arts, law, and medicine. The university chambers are at present in Somerset House. It is principally supported by grants from government. The first examination for matriculation in arts took place in November, 1838. The first examination for degrees will take place in May or June, 1839.
Of societies and establishments connected with science, literature, and the arts, the following are the principal:
The British Museum.
The Royal Society, incorporated 1663.
The Society of Antiquaries, founded 1757.
The Society for the Encouragement of Arts, &c., established 1731.
The Royal Academy of Arts, incorporated 1765.
The Royal Institution, incorporated in 1800.
The Linnean Society, established 1802.
The British Institution, established 1805.
The Geological Society, established in 1810.
The Society for the Diffusion of Useful Knowledge, established in 1826, incorporated in 1832.
The Horticultural Society, established 1808.
The Mechanics' Institute, in Southampton Buildings, established in 1833.
The Royal Astronomical Society, established in 1820.
The Royal Geographical Society, established 1830.
The Royal Asiatic Society, established 1823.
The Zoological Society, established 1829.
The Architectural Society, established in 1831.
The Royal Society of Literature, established in 1820.
The Society of Civil Engineers, established in 1828.
The Statistical Society, established 1834.
The Royal Institute of British Architects, established 1835; incorporated by charter 1837.
The London Institution, established 1806.
Sion College, incorporated 1630.
Entomological Society, instituted in 1806.
Phrenological Society.
City of London Literary and Scientific Institution.
College of Physicians, established in 1815.
College of Surgeons.
Company of Apothecaries.
And several medical societies.
Of late years numerous literary and scientific institutions have been established within the metropolis; their general objects are the same, being the communication of useful knowledge by means of lectures, classes, the formation of libraries, and collections of various kinds.
The principal places of public amusement in the metropolis are:
The Queen's Theatre (Opera House), Haymarket.
The Theatre Royal, Drury Lane.
Covent Garden.
The English Opera House, Strand.
The Royal Adelphi Theatre, Strand.
The Olympic Theatre, Wych Street.
The St. James's Theatre.
The Surrey Theatre.
The Victoria Theatre, Waterloo Road.

The City of London Theatre, Norton Folgate.

The Pavilion Theatre, Whitechapel Road.

The Garrick Theatre, Goodman's Fields.

Sadler's Wells Theatre.

Royal Fitzroy Theatre, Tottenham Court Road.

Vauxhall Gardens.

The places of general recreation are:—St. James's Park, Hyde Park, Kensington Gardens, the Regent's Park, and Greenwich Park, on the banks of the Thames at Greenwich. With the exception of Greenwich Park, they may all be considered as in London, and are easily accessible to all the inhabitants of the metropolis.

Trade, &c.—The accidental burning of the Custom House of London, in February, 1814, in which the greater part of the trade records of the port and kingdom were destroyed, renders it impossible to give a complete account of the commerce of the metropolis for any preceding period. The relative proportion of the foreign and colonial trade enjoyed by its merchants during the present century will be sufficiently shown by the following statement of the net amount of customs duty, collected at the different times from the year 1815, in London and in all the various ports of the United Kingdom, including London:

<table>
<thead>
<tr>
<th>Year</th>
<th>London</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>1815</td>
<td>28,526,441</td>
<td>10,531,551</td>
</tr>
<tr>
<td>1816</td>
<td>28,526,441</td>
<td>10,531,551</td>
</tr>
<tr>
<td>1817</td>
<td>28,526,441</td>
<td>10,531,551</td>
</tr>
<tr>
<td>1818</td>
<td>28,526,441</td>
<td>10,531,551</td>
</tr>
<tr>
<td>1819</td>
<td>28,526,441</td>
<td>10,531,551</td>
</tr>
</tbody>
</table>

It appears from these figures, which are taken from official returns, that the payments into the Exchequer by the Custom House of London amount to so much as the net receipts of all the customs houses in Great Britain and Ireland. It was expected that the opening of the China trade, and the consequent participation of other ports in the tea trade, which had previously been monopolized by London, would have considerably altered the above proportions; but it will be seen that such a change has not taken the result: in fact, the buyers of this article of general consumption still resort to London as the market in which they can select their purchases to the greatest advantage.

The number of ships, with the amount of tonnage, that have from this port, give a bet of the actual amount of its trade than is afforded by revenue accounts, which must vary with the fiscal regulations of the country, and which exclude altogether goods that enter the ports or are re-exported or sent coastwise under bond to other

The shipping belonging to the port in the same year (1792) was:

<table>
<thead>
<tr>
<th>Year</th>
<th>Ships</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1792</td>
<td>1109</td>
<td>94,922</td>
</tr>
</tbody>
</table>

The number and tonnage of vessels, British and foreign, that entered the port from foreign parts in each year from 1820 to 1837, will show how greatly its foreign commerce has increased during the last half century:

<table>
<thead>
<tr>
<th>Year</th>
<th>Ships</th>
<th>Tons</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820</td>
<td>3,256</td>
<td>655,530</td>
<td>122,619</td>
</tr>
<tr>
<td>1821</td>
<td>2,000</td>
<td>865,894</td>
<td>127,241</td>
</tr>
<tr>
<td>1822</td>
<td>2,300</td>
<td>865,167</td>
<td>130,599</td>
</tr>
<tr>
<td>1823</td>
<td>2,500</td>
<td>865,451</td>
<td>136,287</td>
</tr>
<tr>
<td>1824</td>
<td>2,700</td>
<td>865,733</td>
<td>143,511</td>
</tr>
<tr>
<td>1825</td>
<td>2,900</td>
<td>865,033</td>
<td>151,878</td>
</tr>
<tr>
<td>1826</td>
<td>3,100</td>
<td>865,322</td>
<td>160,251</td>
</tr>
<tr>
<td>1827</td>
<td>3,300</td>
<td>865,606</td>
<td>169,678</td>
</tr>
<tr>
<td>1828</td>
<td>3,500</td>
<td>865,888</td>
<td>179,101</td>
</tr>
<tr>
<td>1829</td>
<td>3,700</td>
<td>866,167</td>
<td>188,529</td>
</tr>
<tr>
<td>1830</td>
<td>3,900</td>
<td>866,445</td>
<td>198,956</td>
</tr>
<tr>
<td>1831</td>
<td>4,100</td>
<td>866,716</td>
<td>209,383</td>
</tr>
<tr>
<td>1832</td>
<td>4,300</td>
<td>866,987</td>
<td>219,810</td>
</tr>
<tr>
<td>1833</td>
<td>4,500</td>
<td>867,257</td>
<td>230,236</td>
</tr>
<tr>
<td>1834</td>
<td>4,700</td>
<td>867,527</td>
<td>240,662</td>
</tr>
<tr>
<td>1835</td>
<td>4,900</td>
<td>867,798</td>
<td>251,088</td>
</tr>
<tr>
<td>1836</td>
<td>5,100</td>
<td>868,069</td>
<td>261,514</td>
</tr>
<tr>
<td>1837</td>
<td>5,300</td>
<td>868,339</td>
<td>271,940</td>
</tr>
<tr>
<td>1838</td>
<td>5,500</td>
<td>868,609</td>
<td>282,366</td>
</tr>
<tr>
<td>1839</td>
<td>5,700</td>
<td>868,879</td>
<td>292,792</td>
</tr>
<tr>
<td>1840</td>
<td>5,900</td>
<td>870,141</td>
<td>303,218</td>
</tr>
<tr>
<td>1841</td>
<td>6,100</td>
<td>870,402</td>
<td>313,644</td>
</tr>
</tbody>
</table>

The above figures exhibit an amount of activity in the prosecution of foreign trade wholly without a parallel, but those numbers are far exceeded by the coasting trade of the port.

The number and tonnage of coasting vessels that entered London from other parts of the United Kingdom, distinguishing those engaged in the trade with Ireland, during the six years from 1833 to 1839, were as under:

<table>
<thead>
<tr>
<th>Year</th>
<th>Ships</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1833</td>
<td>2,149</td>
<td>229,479</td>
</tr>
<tr>
<td>1834</td>
<td>2,460</td>
<td>261,873</td>
</tr>
<tr>
<td>1835</td>
<td>2,752</td>
<td>294,268</td>
</tr>
<tr>
<td>1836</td>
<td>3,043</td>
<td>326,663</td>
</tr>
<tr>
<td>1837</td>
<td>3,334</td>
<td>359,064</td>
</tr>
</tbody>
</table>

The number of ships that cleared out from London to different parts of the world in each year from 1831 to 1837 have been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Ships</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1831</td>
<td>2,149</td>
<td>229,479</td>
</tr>
<tr>
<td>1832</td>
<td>2,460</td>
<td>261,873</td>
</tr>
<tr>
<td>1833</td>
<td>2,752</td>
<td>294,268</td>
</tr>
<tr>
<td>1834</td>
<td>3,043</td>
<td>326,663</td>
</tr>
<tr>
<td>1835</td>
<td>3,334</td>
<td>359,064</td>
</tr>
<tr>
<td>1836</td>
<td>3,625</td>
<td>391,461</td>
</tr>
<tr>
<td>1837</td>
<td>3,916</td>
<td>423,858</td>
</tr>
</tbody>
</table>

It is not possible to form any reasonable estimate of the quantity of merchandise brought by canal and by carriage to London or of what is by the same conveyance to the interior of the kingdom, but it must be great. There is no town or village of any note in midland districts which does not keep up a constant commercial intercourse with the metropolis by means of boats, or waggons or both, but nothing is known concerning the quantity of goods transported. It would be easy for the proprietors of canals to give an account of their traffic, but all information of this kind is systematically withheld. The value of foreign and colonial produce and merchandise consigned in the warehouses of the great docks is very great, but an accurate account of the quantities remaining has been taken at any time since the commencement of the warehousing system, it is not possible to give any more definite information on the subject.

[Dockers.]
The amount of postages collected in London in each year from 1832 to 1837 was as follows:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Posts.d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1832</td>
<td>632,996</td>
</tr>
<tr>
<td>1833</td>
<td>632,975</td>
</tr>
<tr>
<td>1834</td>
<td>604,111</td>
</tr>
</tbody>
</table>

During this time there has been no increase in the rate of postage, and the progressive increase in the amount collected is probably not more than equivalent to the increase of inhabitants. The above sums form a fourth and a third part of the gross produce of the post-office duty in the United Kingdom. The post communications between London and various parts of the United Kingdom have been greatly accelerated by means of the different lines of railway already opened, and as the system is extended, greater improvements are its object will of course be realized. At present the letter-bags which leave London at eight o'clock in the evening arrive at Edinburgh early on the second morning. Letters for Liverpool despatched at the same time are delivered by eleven o'clock the following morning.

Steam-Boating.—The sea is a part in the kingdom which has profited more than London through the application of steam to navigation. A great part of the steam-vessels that arrive and depart carry passengers only, and are therefore not required to make entry at the custom-house, and with regard to goods can make no distinction between the custom-house between them and sailing-vessels, for which reasons no accurate account of the number of this class of ships that enter and leave the port can be given. Steam passage-boats are passing and repassing at all hours during the day from London and Gravesend to and from London and Greenwicht and Woolwich, and others start every quarter of an hour during the day from the London Bridge and Westminster. To Gravesend boats go at various times during the day, and in the summer there are several departures and arrivals every day from Southend and Ramsgate. Between London and Calais, Boulogne, Antwerp, and Rotterdam steam-vessels are passing almost daily in summer and frequently in winter. With various ports in England, Scotland, and Ireland, a constant intercourse maintains the same manner.

LONDON CLAY.—The most considerable of the tertiary formations of Great Britain is thus designated, from its development in the valley of the Thames under and around the metropolis. It may be viewed in three parts, occupying the following districts:—

Upper part.—Bagshot Sand, in which several remarkable fishes have been lately noticed by Dr. Buckland.

Middle part.—'London Clay.'—Containing a few bands of sand, nodules of septaria, and multitudes of marine shell-fish and fresh-water shells.

Lower part.—'Plastic Clays and Sands.'—Various coloured clays and sands, with lignite, and marine, mammal, and fresh-water shells.

LONDON, NEW. [Connecticut.]

BRIEF ACCOUNT OF THE MARITIME COUNTIES:—Londonderry is a maritime county of the province of Ulster in Ireland, bounded on the north by the Atlantic Ocean, on the east by the county of Antrim and a portion of Loch Neagh, on the south by the county of Tyrone, and on the west by the county of Donegal. According to the map of Ireland, published by the Society of the Diffusion of Useful Knowledge, it lies between 54° 39' and 55° 22' N. lat., and between 6° 28' and 7° 21' W. long.; and, according to the map of the Ordnance Survey of Ireland, extends from the Tyrone boundary at Neart Beg, to the distance of 50 miles, which is the height of the Portrush on the north, 40° statute miles; and from the Donegal boundary near Londonderry on the west, to the Tyrone boundary at Killea Bridge on the east, 34 statute miles. The area, according to the same map, consists of—

<table>
<thead>
<tr>
<th>Water</th>
<th>507,997</th>
<th>27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>10,404</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>518,401</td>
<td>30</td>
</tr>
</tbody>
</table>

The county is of an irregular triangular area, of which the eastern and north-western side may be considered as formed by the shore of Loch Neagh and the line of the river Bann, the south-western by the Tyrone boundary, and the north-western by the river Foyle and coast-line. From the Bann the surface gradually rises westward for about ten miles, forming a chain of elevations which bound the valley of that river on the west, and constitute the most remarkable feature of the interior of the county. These heights slope with a gentle declivity eastward and northward, but present steep and often precipitous escarpments towards the west, in which direction they overlook an extensive tract of undulating country extending from their bases to the eastern shore of Loch Foyle, and bounded on the south by the mountainous district which separates the counties of Tyrone and Donegal. Between the southern extremity of the first-mentioned range and the shore of Loch Neagh a comparatively level tract is interposed. The country between the rivers Bann and Foyle may thus be conveniently considered as divided into three parts, viz., the basin of the district of Loch Foyle, and the district of Loch Neagh. The Lower Bann, from Loch Neagh to the sea, a distance of upwards of thirty miles, has a fall of only 49 feet. The Bann flows up to the Cuts above Coleraine, a distance of six miles, between low banks, which are encumbered towards the mouth of the river with extensive tracts of sand. The north-eastern liberties of Coleraine here occur an irregular semi-circle of about four miles in radius, surrounding the town of Ballycastle. The most remarkable characteristics of this district are similar to those of the north coast of the county of Antrim. The elevations are however incomparably greater, and the general aspect of the country is sterner and bleak. On a low rocky peninsula at the extreme north-east the shore is the constant rising of a rush; and nearer the Bann, on an exposed strand running down between low headlands of sand is Port Stewart, a well-built and comfortably situated port. With shelter for any craft the size of a fishing-boat. On the south-west the coast is well sheltered, and at the mouth of the Bann the coast has a bold outline, rising in a series of precipitous cliffs over the sandy beach. These cliffs extend a distance of rather more than two miles, increasing in height as they trend westward, until at the north-western extremity of this tract, which is bounded by the northern boundary, they have an elevation of from 330 to 400 feet. At this point the escarpments which mark the western boundary of the basaltic area commence, and may be traced along the brow of all the heights which have been mentioned, inclining from east to west parallel to this line to Loch Foyle. Of these heights the most prominent are Benyeveagh, at the northern extremity of the range, which rises abruptly over the sandy flat of Magilligan, to the height of 126 feet; Donald's Hill, of father's height, 1315 feet; Benneagh, three miles south of Donald's Hill, 1531 feet; and, separated from Benneagh by the bold amphitheatre valley of Glenashke, the upper or eastern boundary of which is formed by Carntraghe mountain, 1291 feet; and Croaghey mountain, 1271 feet, with its subordinate heights of Altaghe, 1261 feet, and Tamnirgin, 1275 feet, which together form the south-western boundary of the basaltic area, and complete a nearly continuous range of mountain of 24 miles in length from north to south. Within this district the river is deep, and forms striking cascades in falling over the escarpments of Avish and other minor heights north of Benyeveagh, all the waters which rise in the area included between the western fronts of the above-mentioned mountains and the river Bann take their course in the direction of the latter, over which they flow. Of these the most considerable are the Macosquin and Agivey rivers, the former of which has its sources in the slacks, as mountain-passes are here properly termed, between the mountains of Benyeveagh and Knocky, and the run of which is towards the town of Coleraine, being the only one of this group which, in descending from the range of Donald's Hill and Benneagh, on the road leading from Killea on the Bann, westward through the slacks separating the Donald's hill range from the group of Ballycastle, and of which which on this side forms the valley of Glenuller, is the town of Garvagh. The Clady river, rising from the eastern declivities of Carntraghe mountain, also joins the Bann at Portglenone, a point of considerable intercourse between the counties of Londonderry and Antrim. The main drainage of the county is towards Loch Neagh, through the rivers Mayola and Ballinderry, the latter of which forms part of the county boundary on this side. The Mayola has its rise at the bases of the mountain groups which form the head of Glenashke and the valley of Ballinacream, and carries a considerable body of water to Loch Neagh, which it enters at its north-western extremity. The town of
Maghern is situated about midway between the Clady and Moyola rivers, on the road westward from Toome, at which latter place the Lower Bann first issues from the lake. The towns of Castle Dawson, Magherafelt, Tobermore, and Moyle are on the wide intersecting valley of Ballynascreen there are no traces of any connecting formation. West of the valley of Ballynascreen commences a mountain-chain which with little interruption extends to the valley of the river Foyle, forming the boundary between the counties of Tyrone and Londonderry. The highest of the group is Sawell, which rises to a height of 2336 feet, about midway between Slieve Gallion and the western extremity of the range. The other chief heights on the range are Mnamard, east of Sawell, 2057 feet; Dart mount, a district of twelvemiles west of the village, is occupied Mnamard, 1872 feet; and Slieve Kirk, which forms the western extremity of the range, 1224 feet. The district included between these mountains and Loch Foyle, constituting the western division of the county, is divided by a range of hills into the valleys of the river Bann and Foyle. The former, rising in the upper part of the Glenshane, is joined by the Owenreagh and Owenbeg rivers at the entrance of that valley, from which it pursues a northern course nearly parallel to the line of abrupt declivities of the district region, and from which the valley, as it enters by a sharp turn to the west immediately under the base of Benyevenagh. Several streams join the Roe from the comparatively level tract interspersed between it and these mountains, rendering it, next to the Foyle and Bann, the most considerable river of the district, and of the Roe, especially towards the embouchure of the river, is flat and open, and contains much good and highly improved land. The thriving town of Newtown Limavady is situated on this river about five miles above its mouth, on the high road from Ballymena to Dungiven, that chiefly of the river. Limavady, which places it the most important town of the county. Dungiven, also a place of some consequence, occupies a romantic site on the same river near its junction with the Owenreagh, in the opening of the valley of Glenshane. The principal roads from the east to the west of the county pass through these towns, which severally occupy points at which the leading mountain-passes converge. The open rich country of this valley, called Moyle, or the plains of the Roe, extends westward along the southern shore of Loch Foyle, and opens at its mouth into the Faughan river, which springs from the northern declivities of Sawell, after skirting the bases of the several mountains which extend from the central portion to within eight miles of the Foyle, makes a sharp turn to the east of north, and runs through a highly improved open valley to Loch Foyle. From the village of Clady, situated near the sources of the Faughan, to the point where the river turns northward, the tract is occupied by well-improved grounds and numerous bleach-greens. The fertile vales of Bond's Glen and Glenriddle open from between the mountains forming the county boundary on this portion of the valley of the Faughan. The district between the Rac and the Roe and Teach-na-Claine is composed of a number of large tracts, each encompassed with wood and mountain. Legavannon, the principal eminence, which occupies nearly the centre of the tract, has an elevation of 1269 feet. Other heights, varying from 600 to 900 feet, spreading southward and westward from Legavannon, form the vales of Burntolough and Fairfares, from each of which a considerable stream descends to the Faughan.

Between the Lower Faughan and the Foyle is a range of undulating ground crossed by a valley through which the worshipers of Clady run from the Bann to the river Lagan by a wagon-road; from thence a wooden bridge completes the communication with Londonderry city. The city of Londonderry occupies a boldly rising ground on the west bank of the Foyle, along which the county embraces an irregular tract extending from about four miles above the city to a mile below Culmore, where the river expands into Loch Foyle. The distance from end to end of this outlying portion of the county is ten miles, and its breadth from one to three and a half. It is all arable and in a good state of improvement, as is also the opposite bank of the river. The Foyle here makes a noble appearance, varying in breadth from 300 yards to half a mile, and being capable of floating ships of 800 tons up to the town. The most remarkable feature of the coast-line is the tract which extends from the north-western extremity of the hilly region to the low point of Magilligan and southward to the mouth of the Roe. On this tract is measured the base-line of the triangulational survey of Ireland now going on under the superintendence of the Ordnance, 53,200 feet in length. The same tract appears to occupy the greater portion of the bottom of the Loch, and rafts towards its centre in a bank which confines the navigation of that portion of Loch Foyle lying along the coast of Donegal. The length of the Loch, which is of a triangular shape, bounded by the low coast of Londonderry on the east and south, and by the bold shore of Enniskillen on the west, is about 16 miles, and its greatest breadth 10 miles on an average of eight years, between the town of Port and Enniskillen Head, is about a mile across, and from this point to Londonderry city is a safe and tolerably sheltered navigation of 23 miles. Eastward of the entrance is a shoal called the 'Tuns,' which renders the Loch difficult of access, and renders it necessary to take the river-side towards the western side of this shoal. Except the small and at present inconvenient harbour of Portrath, there is no other shelter for vessels on the coast of this county. It has been proposed to render the Bann navigable from Loch Neagh to the Mouth of the Faughan. The river is traced by a road along the ledges of rock which cross it at Magovanner, Portna, and the Cutts. There is however an extensive sand-bar at the mouth of the river, which could not be kept open without constant dredging. Under these circumstances it is impracticable to improve the Bann.

The roads throughout the county are in general excellent. The immediate valley of the Bann and the district of Loch Neagh in particular are closely intersected with lines of communication. The western district is not so well opened. One chief route runs from the town of Londonderry, situated by the southern shore of Loch Foyle and the valley of the Lower Faughan with Londonderry, and that which runs by the Upper Faughan from Dungiven to the same place. One road only crosses the rough country interspersed between these lines. The valley of the Roe is well provided with roads, which extend southward by Bannegar to Clady, giving ample means of communication to the country between the heads of the rivers Roe and Faughan. The communication southward is chiefly by the valley of the Faughan, which is crossed by a road connecting the towns of Faughan and Toorae, and the Ballinascreen on the other. Besides these there are several passes from Tyrone into Londonderry among the mountain groups which lie between these points. On the whole, kept open by cattle, as the road to Londonderry, it appears that the maximum annual quantity of rain, on an observation of seven years, was somewhat less than 35 inches, the minimum somewhat less than 26 inches, and the mean 31-1 inches. From the same observations it appeared that there were 291 days free from showery, and 34-3 days wet. The climate is therefore generally means of favourably early sowing. The frequency of the showers, rather than the quantity of rain, renders the air more humid than in many districts where a greater quantity of rain falls.

Geology.—The basaltic tract corresponds in all respects to the remainder of the field on the opposite side of the Bann (Giants' Causeway), with this remarkable difference, that the dip of the strata is reversed; the surface, and the interior of the district, is a continuation of the Bann dipping towards the north-east, whereas their direction on the Antrim side is nearly to the south-west. The basalt, as in Antrim, attains its greatest thickness at the northern extremity of the field, the cap of Benveyenagh is composed of fine black basalt, which by red sandstone, succeed in descending order, one or more of the members being frequently absent, and constitute the remainder of the system, which therefore reposes immediately on the primitive rock. The geological structure of the district may thus be described as a primitive rock overlaid in part by a field of secondary formations, capped by basalt. The boundary line is marked by the abrupt declivities forming the eastern limit of the valley of the Roe, from the southern extremity of the
The valleys of Faughan-valle and Muss-glen, running southward from the open tract along the margin of Loch Foyle into the schistose region, have good tracts of fertile land, composed of a mixture of gravel, loam, and strong clay. The main valley of the Faughan river is in its structure and form similar to the whole of the valley of the Bann, having gravel terraces reaching back to the schistose region at each side. These are well cultivated, and towards the lower part of the valley spread over a considerable tract. Gravel and mica-slate are also the chief constituents of the beds of the Bann. The abrupt rise here occurs in a few detached spots. The best improved portions of the county are the district of Loch Neagh, the valley of the Roe, the valley of the Faughan, including the east of Loch Foyle, between the embouchures of these rivers and the mouth of the valley of Londonderry on both sides of the Foyle. There is a very general scarcity of timber. The chief mansion-house in the county is that of Down-hill, the residence of Sir James Bruce, Bart., built by a late earl of Down for the Down family. It is an imposing architectural pile, situated on the brow of the hill where it rises over the sea, about a mile and a half west of the mouth of the Bann. The cliffs immediately behind the house rise upwards of 100 feet above the beach, and the situation of the mansion is so commanding as to suggest the position of a fort on the deep ravines which surround the demesne on the landward side. There is here a splendid collection of paintings by the old masters, and of other articles of virtù, removed from the galleries at Ballyscullion when the palace erected on the same plan was taken by the report, and the house, as it stood in 1802, was by much the most magnificent residence in the north of Ireland. The situation, on the bare flat near the point where the Bann issues from Loch Beg, was however extremely unfavourable to the formation of a narrow and fine front of the building. The house was accordingly taken down on the death of the earl, and the materials sold.

The progress of agriculture in this county has been materially forwarded by the establishment of an agricultural society, the objects of which are to extend the system of new fields, to improve the cultivation of the old fields, and to spread the knowledge of the most approved system of agriculture. The influence of the society has been particularly beneficial to the farmers in the most remote parts of the county, who here hold large estates under the crown. There are 130 acres of land attached to the school, for experimental farming; a classical school is likewise connected with the establishment. Oats and barley are the principal grain crops. The system of rotation of crops is very generally carried out. There is but little land in pasture, and the breed of cattle, with the exception of pigs, of which great numbers are reared, is in general much not attended to.

The following table exhibits the quantity of grain sold at the chief market-towns, exclusive of Londonderry at Coleraine, in the years 1830 and 1831:

<table>
<thead>
<tr>
<th></th>
<th>Wheel. (tons)</th>
<th>Oats. (tons)</th>
<th>Barley. (tons)</th>
<th>Bar. (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newtown Lintra</td>
<td>1,113</td>
<td>925</td>
<td>2,177</td>
<td>1,820</td>
</tr>
<tr>
<td>Dunkenham</td>
<td>571</td>
<td>395</td>
<td>746</td>
<td>67</td>
</tr>
<tr>
<td>Magherafelt</td>
<td>47</td>
<td>690</td>
<td>214</td>
<td>12</td>
</tr>
<tr>
<td>Moneymore</td>
<td>36</td>
<td>30</td>
<td>53</td>
<td>7</td>
</tr>
<tr>
<td>Killeen</td>
<td>36</td>
<td>310</td>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td>Magheraferl</td>
<td>300</td>
<td>1,200</td>
<td>700</td>
<td>100</td>
</tr>
</tbody>
</table>

The condition of the labouring population is superior to that of the same class in most parts of the north of Ireland. The general rate of wages for agricultural labourers is i.e. per day for 180 working days in the year. The principal staple goods of the country are potatoes, and the system of rotation of crops is very generally carried out. Their dwellings and persons are distinguished by a superior air of comfort. Those of the native race occupy the more mountainous and remote districts: they are a simple and interesting people, preserving vivid traditions of the old highland races, with which they are intimately connected. They are the owners of the land, and have the advantage of being near the coast. Their dwellings and persons are distinguished by a superior air of comfort. Those of the native race occupy the more mountainous and remote districts: they are a simple and interesting people, preserving vivid traditions of the old highland races, with which they are intimately connected. Their dwellings and persons are distinguished by a superior air of comfort. Those of the native race occupy the more mountainous and remote districts: they are a simple and interesting people, preserving vivid traditions of the old highland races, with which they are intimately connected. Their 1831 were in the county 2,543 weavers, 46 reed makers, 288 flax spinners, 21 bleachers, 64 cotton spinners, 1 distiller, 6 maltsters, 135 cooperers, 53 batters
and vintners, 50 millers, 24 corn-dealers, 18 millwrights, 25 tannery, and 18 tobacconists. The export and import trade of the county is carried on at the ports of Londonderry city and Portrush, the latter being the seaport of Coleraine. The exports of Londonderry city in 1833, including 20,602 tons of corn, meal, and flour, amounted in value to 1,404,914l., and the imports to 705,634l. [LONDONDERRY, CITY.] The exports of Coleraine and Portrush in the same year amounted to a value of 105,685l., and the imports to 65,904l. The quantity of corn meal and flour included in the exports of the latter port in that year was 5,195,700 tons.

Drumragh, Town, &c. — Londonderry is divided into the half barony of Coleraine, on the N.E., the barony of Kenniaght, in the E., and centre, containing the towns of Newtown Limavady (pop. 2128) and Dungiven (pop. 1163), and the village of Fahan (pop. 290); Leighaffrey, to the S.E., containing part of the town of Mooneavy (total pop. 1925), and the towns of Magherafelt (pop. 1346). Kilea (pop. 1215), Maghera (pop. 1132), Tobermore (pop. 579), Castle Dawson (pop. 674) and Tyreker (on the W.), containing the villages of Muff (pop. 192), Claudy (pop. 180), and Faughanvale (pop. 123). Besides these, there are, within the county the liberties of Coleraine, containing the town of Coleraine (pop. 5752) and the village of Portstewart (pop. 475); and the liberties of Londonderry, containing the city of Londonderry, and the barony of Drumragh (pop. 15,645). Coleraine was incorporated by charter of 28th June, I, James I. The common-council, including the mayor, are the governing body. The corporate authorities have jurisdiction within the borough, similar to that of the lord-mayor and aldermen of London, but the court of common pleas is without. Their revenue arises from rents averaging 415l. 18s. 6d. per annum, and tolls averaging 314l. 6s. 4d. per annum, which income was chiefly applied in 1833 to the reduction of a debt amounting to 1500l. The marquis of Waterford is the patron of the borough. Coleraine is now the seat of a most flourishing linen manufacture. [COLE- Raine.]

Newtown Limavady was incorporated by charter of 30th March, I, James I. The corporation is now extinct. The town is a thriving one, and has a very cheerful appearance. There is a handsome sessions-house; but the market-house is old and inconvenient. It is a place of considerable trade in grain, and is the centre of an extensive linen bleaching district. The surrounding scenery is highly beautiful.

Magherafelt is also a handsome though small town. It consists of a spacious square with the market-house in the centre, from which the four principal streets diverge. The houses are stone-built and slated. There is a great market for linen and yarns once a fortnight. The linen manufacture is carried on extensively in the vicinity: there are also large brewing and distilling establishments in the town.

Portrush, in consequence of the recent improvements in the harbour, rapidly in 1836. It is at present connected by a steamer regularly with the town of Ballycastle and hence to Liverpool, Glasgow, and Londonderry. Dungiven is the emporium for the whole of the mountainous district round the sources of the Roe and Faughan. It had formerly a considerable manufacture of linen; but the latter is now carried on in a rural village than the others, and is, from its seclusion and the primitive manners of the people of the vicinity, a place of peculiar interest.

Prior to the Union, Londonderry sent eight representatives to the Irish parliament, viz. for two county, two for the city, and one for the borough of Coleraine. In October, 1836, the representation of the county was reduced to two county members, one member for the city, and one for the borough of Coleraine. The representation is now confined to two county members, one member for the city, and one for the borough of Coleraine. The Representation of the county, on the 1st January, 1836, consisted of four chief constables, 15 constables, 77 subconstables, and 160 police. The population of Londonderry was 25,007 males and 16,637 females. Of these, 12,550 males and 10,143 females could read and write at the time of the last census; 112 males and 31 females could read only, and 63 males and 26 females could neither read nor write. The district lunatic asylum for the counties of Londonderry, Donegal, and Tyrone is at Londonderry city, which also contains the county infirmary. There are dispensaries in all the principal towns and villages.

History.—Of the early history of Londonderry county, pending the publication of the 'Ornamentary Memoir,' little can be said, although ample materials exist in the native Irish annals similar to those made available in the published 'Mimor of Londonderry City.' At the most remote period it appears to have been possessed by the septs of O'Goughlin and O'Neill, to whom the tribe of O'Cahan, who held the eastern and central districts, was tributary. The ancient forfeiture of Aileach (Dowaval) to the O'Cahan's, as well as that of the ancient O'Cahan's chief palace of Coleraine, is a subject to be treated of in a subsequent article. The ancient O'Cahan's chief palace of Coleraine, was left in 1197, John de Courcy marched with a considerable force from Downpatrick to Coleraine, where he erected the castle of Mount Sandal, close to the Cuts' fall, and afterwards, crossing the river, plundered the country of O'Cahan, and proceeded to Derry, which he seized; but Hugh O'Neill, of Tyrone, having made a descent on the Antrim coast at Larne, and routed the English there, compelled him to abandon his advance. The establishment of an English garrison at Coleraine would appear to have enabled the English very soon after to reduce to the eastern and central parts of the county into shire-land; and for various records of the reigns of Edward I. and Edward II. grants appear to have been made and inducements to have been taken in Derry in the regular manner, and in the patent roll of the 29th Edward II. is an entry of the appointment of Robert Savage to be sheriff of the county of Derry, and the county was then called. It is probable that the English has continued in force in the eastern parts of the county until the great revolt of the O'Neill's in 1333. [BELFAST.] After that period the native Irish continued undisturbed masters of the county, and it remained so until the middle of the sixteenth century, when the rebellion of Shane O'Neill, a.d. 1568, made it necessary to send a force to Derry. Seven companies of foot and a troop of horse were dispatched by sea under captain Randal, and encamped at Derry in October of that year. An engagement ensued, in which O'Neill was defeated, and Randolf being slain, and an explosion of gunpowder having destroyed the works of the English, the place was soon after abandoned. In the year 1600, Sir Henry De Quervay, with a force of 4000 foot and 200 horse, arrived in the river Foyle, and immediately commenced the construction of three forts, one on the western bank of the Foyle at Culmore, where the river opens into Loch Foyle, one on the
hill of Derry, and one at Dunannel, a little higher up on the eastern bank of the river. This was the first conces-
sion to the Catholic Church, and in 1609, the flight of Tyrone and O'Donnell in the preceding year, left the entire of this and five other counties at the disposal of the crown. On the 23d January, 1609, negotiations were commenced at Skikrull, the point where the river Foyle spreads into the harbour of Loch Foyle, and 144 statute miles from Dublin by the present mail-coach roads.

The municipal boundary, by which the jurisdiction of the corporation is virtually limited, includes an irregular area of 1,714 acres, of which 1,613 acres are on the west side of the Foyle. These limits are considerably restricted by the boundary adopted for parliamentary representation. The site of the city within the walls measures 1273 feet by 633 feet. The area of the hill on which the old town stands is nearly 23,996 acres.

Derry, antiently called Derry-Calgach, first became a place of note in consequence of the foundation of a monastery there, about A.D. 546, by Columba, the celebrated apostle of the Picts. It is probable that before this time the place had been consecrated to religious purposes, as the Loughgrove, which originally covered the hill, and from which it takes its name, continued to be regarded as a sanctified spot for many ages. A small town soon grew up about the monastery, and in 1252, the present town was founded by the south-west. Its whole early history consists of the record of successive burnings and pillagings by the neighbouring Irish and by the Danes. In 1162 eighty houses which had encroached on the old Abbey Church were pulled down, and a new one was erected, which was dedicated to the Temple More, or great church, was built in the next year by the assistance of Murtagh O'Loughlin, king of Ireland. Derry does not appear to have been a place of any military strength at this time, as it fell an easy prey to the forces of De Burgh; but the great rebellion of the succeeding reign rendered this grant ineffectual until after the inheritance had been divided amongst the heirs of the King. On Sir Henry Dockers arrival here in 1600, he describes it as 'a place in manner of an island, comprehending within it forty acres of ground, wherein were the ruins of an old abbay, of a bishoppy's house, of two churches, and one of the souls of the castle.'

The town then conformed to the map of the time, and was considerably diminished. In 1613 a more extended plan was adopted for their reconstruction. The new fort was made to embrace the entire crest of the hill, and was surrounded with walls and ramparts protected by seven bastions and three demi-bastions. The four principal streets, leading from as many gates in the several sides of the parallelogram, were laid out at right angles, a handsome square for the corporation-house being formed in the centre of the town. In 1622 the town-house was erected. Up to the year 1629 the total expenditure of the London companies in building and fortifying the walls, erecting houses, constructing quays and wharfs, and making roads, was 27,972/. In 1630 the fort was strengthened at a further expense of 31,439/. After the cancelling of the company's charter in 1637, and the subsequent breaking out of the great rebellion, put a stop to these improvements. The city now became an asylum for the distressed Protestants of the counties of Londonderry, Tyrone, and Donegal. In 1649 there was a further augmentation of the parliamentary elections in peaceable possession until the conclusion of those troubles, for the time, by the restoration of King Charles II. In consideration of the services of the
citizens, their charter was renewed by letters patent of the 6th April, 1662, and the city again began to prosper. About 1665 however a great decay took place in trade and commerce, and two years after, on a quo warranto brought against the corporation by the government of King James II, the charter was declared to be illegal. The consequent proceedings of the government excited universal alarm among the Protestants of Ireland, and a report of an intended masquerade having reached the city in the latter end of the year 1666, decided the inhabitants on refusing admission to King James's regiment, which had been landed close by the lord lieutenant Tyrconnell to garrison the place. The gates were closed by some resolute young men of the town, on the 7th of December, just as the advanced guard of the king's forces appeared on the opposite side of the river. The inhabitants made sallies, and Derry became their principal rendezvous. Lord Mountjoy, a Protestant nobleman, holding a commission in the army of King James, was, with some difficulty, admitted by the citizens, who stipulated that one-half of any force he might introduce should be Protestant. The inhabitants increased their garrison, and Derry became the object of the army's first operations. On the approach of King James, who proceeded on the expedition in person at the head of 20,000 men, Lundy declared the place untenable, and demanded the surrender of the forces which had just arrived in the bay from landing in the face of the superior force advancing against them. The citizens, indignant at his cowardice, rose tumultuously, seized the gates, and fired upon the advanced guard of the Irish. Lundy having fled with the flying army, a council of war was held to decide whether the town should surrender. Walker, rector of Donoghole, and Major Baker, and formed themselves into eight regiments, amounting to 7020 men and 41 officers. Eighteen clergymen of the establishment and seven dissenting ministers, laying aside all sectarian animosities, joined their forces. After a battle a few miles from the town, the besiegers crossed and stormed the town. The citizens conducted their defence by a vigorous fire from the walls, and by irregular sallies, which were generally attended with success. After the first eleven days of the siege, King James withdrew, leaving seven regiments to maintain a siege, which lasted until the month of July, after the inhabitants had been reduced to the necessity of eating dogs, horseflesh, hides, and tallow, and when even these were failing, two ships laden with provisions and conveyed by an English frigate entered the bay. The foremost victualling ship, after discharging batteries on the batteries on either side uninjured, struck the boom and broke it. The siege, which had lasted 105 days, was immediately raised. The garrison lost 3020 men; and, of the 3000 who remained, more than 1000 were unfit for duty. The number of the citizens between siege and retreat, and those who died from disease in their camp, was 8000. On the representations of the heroic Walker, the twelve London Companies advanced 1000, each for a month, and immediately contributed; wood was supplied by the Society, abatements made in the rents, and the terms of many leases rendered more favourable to the tenants. The town-hall, which had been destroyed during the siege, was rebuilt in 1692. In 1789 a wooden bridge was commenced over the Foyle, and, by the outlay of passage had been a ferry. The architect was Leonard Cuse by the order of the corporation of Boston in New England. The original expense was 16,294l. 6s. 6d. Two years completely the work, which, having been frequently repaired at an expense rather greater on account of improvements, cost, in 1800, 20,000l. The length is 1600 feet, and the breadth 40. A turning bridge near the western end of the structure admits the passage of vessels up the river. The greatest depth of the Foyle here at low-water is 31 feet, and the rise of the tide is from five to nine feet.

The depth of water at the quays is from 12 to 14 feet at low-water of neap tides. The velocity of the current is from three to four miles an hour in the narrowest part of the channel, and from two to three in the widest.

The charter of the corporation dates from the 11th Jan., 1628, 1629. The body corporate is the common-council, consisting of 12 aldermen, including the mayor, 24 burgesses, and two sheriffs. The mayor is chosen by the common-council from the aldermen. The freedom is secured by birth, servitude, marriage, and special favour. The same law prevails by the western and apportioned the crown. The city sessions, to hear and determine feuds, are held three times in the year. A court of record, with civil jurisdiction, unlimited in amount, is held before the mayor or recorder, and sitting with the exception of the recorder by five justices. The corporation do not now possess any property not held for special public trusts. In Feb., 1833, they owed a total debt of 64,444l. 17s. 6d., of which 34,650l. 9s. 11d. was paid by a sale of their then remaining property. The balance there are not now any funds, save the above rents, available. Prior to the Union, Londonderry city returned two members to the Irish parliament. Since that time it is represented by one member for the borough of Londonderry. The city or corporation consist of 724 electors.

The general appearance of the city is highly imposing. The hill on which it stands rises boldly over the Foyle, the river and the sea. Above the summit of the hill, 119 feet above the level of the river, is the cathedral, the spire of which rises to the height of 178 feet from the churchyard. Walker's testimonial—a fluted Doric column, 90 feet high—springs nearly from the same level on the central eminence. The church is approached with the cupola of the town-house, give a very strong outline to the mass of buildings which stretches from the water's-edge upon the northern and eastern aspects of the hill, and spreads westward into an extensive suburb, consisting of the town and suburbs, built on the site of the old town from the adjoining eminences. The bishop's palace stands within the walls at the southwestern extremity of the town, near the cathedral. Between the cathedral and palace is the court-house, a very handsome edifice, erected by the corporation in 1724, at the cost of 33,715l. (Irish) in the year 1724. The crown-prison department is somewhat too extensive for the demands of justice in so peaceable a county. Outside the walls, at the opposite extremity of the town, facing the river, is a large dockyard, long and wide, built for the accommodation of vessels of 1500 tons. The quays extend from the bridge northward for rather more than half a mile, and terminate in a practicable ship, constructed in 1800 at a cost of 4000l. Such slips as to answer all the purposes of a dry-dock for vessels of 300 tons register. A general shipyard is attached to the dockyard, consisting of two slips, on to which vessels of 200 tons and upwards have been recently built. The walls and ramparts are still kept in repair, and form an agreeable promenade for the citizens. Between 1603 and 1608 the three principal gates were built at a cost of 16,000l., and besides the Citie, the side occupied by the cathedral and court-houses, a handsome triumphal arch with lateral passages, erected by the corporation in 1769.

The lighting, cleansing, and watching of the city are managed by a committee of five, under the act of 2 and 3 Will IV., c. 107. The gas-works which supply the city were established by a joint-stock company in 1839, at an expenditure of 7000l. The supply of water is from a tank on the opposite side of the river. The water is conveyed across the bridge by a cistern, the jet of which opens the turning-platform in the bridge for the cisterns. Near the city, towards the east, is a cistern, the valves of which are placed in a tower, the cisterns being filled daily by 13,966 tons, of the value of 872l.

The port is under the control of a committee acting under the provisions of the 2nd and 3rd Wm IV., c. 107, which acts also regulates the tonnage duties. The quays, which...
up to 1831 were the property of the corporation, are now in the hands of private individuals and companies. There are twenty-five such quays and wharfs, including two on the seaside bank of the river. The shipping belonging to the port in 1837 consisted of forty sailing vessels of an aggregate tonnage of about 6000 tons, and of six steam-boats of an aggregate tonnage of 1063 tons.

The number of vessels employed in the foreign trade varied between 13,000 and 13,500, of an aggregate tonnage of 3850 tons; outward fifteen, of an aggregate tonnage of 4860 tons. Coastwise, in the same year, the number inwards was 867, and the tonnage 79,953 tons; outward 543, tonnage 66,260 tons. These returns, compared with those of 1826, which were forty-six, of an aggregate trade of 1870 tons; PEAT, and a more than considerable increase in the trade coastwise, which, within the last ten years, has more than doubled.

### Exports of Londonderry in the year 1835 (exclusive of re-shipments of Sugars).

| Articles                          | Quantity | Tons. cwt. | Estimated value.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cane, molasses, and sugar</td>
<td>416,042</td>
<td>90,902</td>
<td>126,676</td>
</tr>
<tr>
<td>Potatoes (including flax)</td>
<td>85,000</td>
<td>4,249</td>
<td>727,066</td>
</tr>
<tr>
<td>Linseed</td>
<td>81,129</td>
<td>4,066</td>
<td>919,940</td>
</tr>
<tr>
<td>Flax</td>
<td>83,500</td>
<td>2,263</td>
<td>10,656</td>
</tr>
<tr>
<td>Linseed</td>
<td>5,088,992</td>
<td>839</td>
<td>314,749</td>
</tr>
<tr>
<td>Wool</td>
<td>5,600</td>
<td>2,259</td>
<td>8,120</td>
</tr>
<tr>
<td>Osw and cloths</td>
<td>855</td>
<td>285</td>
<td>6,130</td>
</tr>
<tr>
<td>Hays</td>
<td>36,900</td>
<td>1,180</td>
<td>11,500</td>
</tr>
<tr>
<td>Hides and calfskins</td>
<td>39,000</td>
<td>374</td>
<td>11,255</td>
</tr>
<tr>
<td>Other articles</td>
<td></td>
<td></td>
<td>21,060</td>
</tr>
</tbody>
</table>

The total number of sheep sold in 1835 was 1,195,000, of which 1,059,000 were sold to the city and suburbs. The sales of cattle and hogs were also largely increased over the previous year. The number of horses sold was estimated at 1,675,000, of which 1,542,000 were imported and 1,232,000 were exported. The number of sheep and of cattle sold was in consequence of the increase of the trade.

The number of retail premises in the city in 1835 was 1,120, inhabited by 102 families; in 1823 the number of houses was estimated at 1,400, and of inhabitants at 1,050; in 1821 the number of houses was found to be 1,329, and of inhabitants 1313. In 1831 the numbers were—houses 1405, inhabitants 10,120, and of some 54 families were chiefly employed in agriculture; 1297 in trade, manufactories, and handicraft; and 461 were not added in either class. According to the Report of the Commissioners of Public Instruction, the numbers in 1834 were—

- Within the walls: 2,121
- Without the walls: 11,164

And these appear to be still increasing.

The schools, in 1836, in the city, suburbs, and liberties, 345, supported wholly by the pupils, educating 749 males and 504 females; and 12 daily schools, supported wholly or in part by contributions and bequests, educating 660 males and 564 females. Gwyn's Charitable Institution has an income of 1970l. 13s. 4d. per annum; in 1836 there were 81 boys on the establishment. The Diocesan and Free Grammar-schools has an income of 600l. 4s. per annum, 657l. 6s. 2d. of which is contributed by the London companies, the Irish Society, and the bishop. The Irish Society also contributes to the support of several other schools. In 1836, schools, in 1836, were in connection with the National Board of Education. In the city is a public library and news-room, with a collection of about 300 volumes, established in 1819, and in 1824 transferred to a new building now occupied by the Free Grammar School. There is also a literary society, established in 1834. The savings' bank, established in 1816, had deposits amounting to 16,226l. 15s. 6d. on the 10th Nov. 1835. The number of depositors was 659. Two weekly newspapers are published in the city.

Of the charitable institutions the principal are:—the Mendicity House, established in 1825 by Bishop Knox, and supported by voluntary donations averaging 450l. per annum, the Poor-School, which provides the indigent with clothing and bedding at prime cost, and also by contributions averaging about 45l. annually; and the Ladies' Penny Society, established in 1815, for the relief of sick and indigent room-keepers, supported by subscriptions averaging 200l. per annum. There is also a charitable loan-fund, a penitentiary for females, and some minor charities. The district lunatic asylum stands on the north side of the city. It was opened in 1829, at a cost of 22,576l. 2s. 4d., and is calculated for 104 patients. The funds for its support are advanced by the Corporation, and supported by annual contributions from the subscribers in the city and suburbs.

In the same year the imports amounted to an estimate value of 798,954l. The chief articles were sugar, 56,744l.; cotton, 24,950l.; British spirits, 21,820l.; tea, 19,255l.; flax-seed, 16,709l.; haberdashery and apparel, 13,540l.; fish (chiefly herrings), 10,811l.; tallow, 9570l.; glass and earthenware, 9890l.; tobacco, 32,174l.; and coal and cumin, 8776l. The customs of the port for the year 1837 amounted to 35,626l.

It is estimated that the quantity of goods of all kinds carried annually into the city by inland conveyances is 38,400 tons, of which 7,000 tons are for exportation; and the total quantity of goods imported into Ireland during the year 1837 was 67,560 tons, of which 54,000 tons consist of goods imported. The grading of goods (chiefly oysters) is the chief branch of manufacture carried on in the city and suburbs. There are two extensive distillery, a brewery, copper-works on a large scale, and a metal foundry. In these seven steam-engines, are employed, of an aggregate of 116 horse-power.

The salmon fishery of the Foyle gives employment to 120 men besides water-keepers. The fish are exported to Liverpool, Glasgow, Bristol, and Dublin, in boxes, packed with ice. The produce has increased greatly within the last ten years, in consequence of the introduction of sakes.

In 1835 the total number of fish taken in state and draught nets in the Foyle was 55,906, weighing 143 tons 6 cwt. This fishery belongs to the Irish Society.

In the year 1836 was a report presented to the city by 92 families; in 1821 the number of houses was estimated at 1458, and of inhabitants at 10,570; in 1821 the number of houses was found to be 1329, and of inhabitants 9313. In 1831 the numbers were—houses 1405, inhabitants 10,120, and of some 54 families were chiefly employed in agriculture; 1297 in trade, manufactories, and handicraft; and 461 were not added in either class. According to the Report of the Commissioners of Public Instruction, the numbers in 1834 were—

- Within the walls: 2,121
- Without the walls: 11,164

...and equal in time, or duration, to two breves, or four semi...
LONGFORD, an inland county of the province of Lein-
ster in Ireland, bounded on the north-west by the county
of Leitrim, on the north-east by the county of Cavan, on
the south-east by the county of Westmeath, and on the
south by the county of Roscommon. It is separated from
the last by a narrow body of water, the Shannon. Accord-
ing to the map of Ireland published under the super-
intendence of the Society for the Diffusion of Useful
Knowledge, it lies between 53° 29' and 53° 56' N. lat., and
between 7° 59' and 8° 48' W. long. According to the Ordi-
inance Survey of Ireland, it extends from the Leitrim
boundary at Gulladoo Loch on the north to the West-
meath boundary on the south, 29 statute miles, and from
the Barra Tumhain bridge on the west to the Letsy, or
Leshy, Loch, near Longford, 32 miles. Its area, ac-
cording to the same map, consists of—

| Land | 269,409 | 421 square statute miles nearly. In 1831 the total popula-
| Water | 12,675 | tion was 112,538.

The general slope of the surface is westward and south-
westward towards the Shannon, except in the north-eastern
angle towards Cavan, where the county embraces a small
portion of the basin of Loch Erne. This district, forming
the immediate basin of Loch Gownagh, is separated from
the north-eastern border of the county by a slightly raised
tract upon the north, and by a series of hills of low elevation
on the west. The latter eminences range from 200 to 400 feet
above the level of the lake, and form the eastern front of
the Cairn Culhoun group. Loch Gownagh is a very ir-
regular piece of water, extending from the southern boundary
of the district of Drumlain, a bare tract extending along the
southern border of Leitrim, and watered by the Ballinamuck,
or Clonard river, which rises from Loch Annagh, in the north
of the Clonard Culhoun hills. Ballinamuck is a small place,
and the greater part of it is included in the county of
Roscommon; but the surface improves towards Drumlain, which
is a place of some trade in grain. The angle included between
the Shannon and the river Rinn, which flows southward out
of Leitrim [Leitrim], is much frequented with beg. Between
the western termination of the Clonard Culhoun hills and
the Shannon is an open well-cultivated tract, in which the
thriving town of Newtown Forbes is situated. Newtown
Forbes lies about two miles eastward from the Shannon,
which here enters a lake by three miles long by three miles
wide and a half to a mile in width, called Loch Forbes.
The intermediate flat, being about two miles every way,
is occupied by the extensive plantations of Castle Forbes,
the seat of the Earl of Granard. The south-eastern slope
of the Clonard Culhoun hills forms one side of the immediate
valley of the Camlin, a considerable river, which, taking its
rise in the extreme east of the county, skirts the low range
bounding the basin of Loch Gownagh on the south, whence
flowing through the small lakes of Killern and Balilakkin,
it runs in a westerly direction, by a winding course
south-west, through which the Camlin flows is open and well
impro.

The southern bank of the river in particular is beautifully
watered, with a belt of good trees and well planned domes.
On the north side of both these lakes was an ancient
fortification of stones, which formed the chief dwelling
place of the old Irish tribes, and is supposed to be the
eminence of Sluaghain. It is thus evident that this country,
which is quite elevated, is admirably situated for the
purpose of a fortification, and it is not unlikely that the
Shannon, which along the south-western boundary
throughout its whole course is very flat and boggy. The arable
portion of this district towards the Shannon is low, and along the shores of
Loch Reer, which here forms the boundary of the county, is
subject to extensive water-flooding. These inundations make
the interval of cultivation very small, but those of the Berry
and Derry are the chief, and extend over a large extent of
the country, merging several large peninsulas and converging others
islands.

Next to the district of Ballinamuck, this is the most
productive part of the county. Along the border north-eastward is
seen some handsome tracts of woods and good tracts of
pasture-land. The towns are Clondra, or Rodin Harbort, at the terminus of the
Royal Canal. which, from its natural confluence of the Letsy, is a
stream of 212 feet above tide, and is a tributary of the Shannon
running to Roscomman. An inlet of Loch Reer, running at
four miles eastward from the main sheet of the lake, b
part of the county on the south. Near the south-eastern part of this district, the town of Johnstown
lies on the banks of the Shannon; it is an important place,
and contains a considerable number of inhabitants.

The Shannon, between the points where it becomes
a boundary of the county, has a coast-line, including
ings, of about fifty miles. Above Loch Reer there
is a navigable water-way for four miles long by three
miles broad, from thirty to forty tons, drawing 3}
feet. The freight, including tolls, is five pence per mile. The total amount of goods carried in
direction, in the year 1835, was 9,700 tons, of
which 2,900 were carried by water, and 6,800
for navigation; but as yet there has been no attempt to
remove the slight obstructions which prevent the
use of boats. The Royal Canal, entering the county at

nearly parallel to the Inny, turns northward at Ballymahon, from which its course is parallel to that of the Kenagh river. At Abbeyshrule, near where it enters the county, its elevation is 223 feet at the level of the sea, and at Cloondara, at its terminus, 139 feet. The intermediate descent of 84 feet is distributed over seven locks. A branch of six miles in length, on one level, is carried from the main line near Killahunce, across the Kenagh and Aragh rivers, and at age to the heads of two small lakes. Fly-boats for passengers have recently been established along the entire line to Dublin, which perform the trip from Longford to Dublin in fifteen hours. The time required by slow passenger-boats is twenty hours. They proceed on the 1st of May, 1837, was 18,130, and by slow passenger-boats 26,360. At the time of this return the fly-boat system had not been extended beyond Mullingar. In the year 1837 the smallest number of passengers carried on board the entire canal was 34,349; of casks of butter, 3638; of tons of meal and potatoes, 26,024; of tons of merchandise, 6247; of tons of coal and manure, 14,559; of tons of turf, 21,724; and of stone, lime, and bricks, 16,157: making a total tonnage of 84,684 tons, and a revenue of toll of 10,964. 16s. 5d. The canal is in general well opened with highways, which are kept in good repair by the county. The climate is not so genial as that of the midland counties in general. There is a considerable extent of wet and marshy surface.

Geology.—The entire district south of the Camlin consists of the flinty limestone of the central plain, with the exception of the country to the south of the Lanesborough and Longford lines, across the bed of the river Inny round Ballymahon, and the other constituting the mass of Strike Goldy, and spreading northward to the near town of Longford. The immediate valley of the Camlin on its southern bank, and the part of the river, extending from the town of Leitrim, consist of slate-clay, constituting a portion of the gravewacke formation of Cavan. Between the western extremity of the clay-clay field and the limestone field, which crosses the bed of the Camlin near its junction with the Shannon, and an area of country to the south of the town of Longford, is a belt of yellow sandstone and conglomerate inter-venes: this last formation is in connection with a tract of a similar character in the south of the county of Leitrim. The rakers, or low gravel region, which occur so frequently throughout the country, is 5490 acres, and the poorer land of Longford, are also similar in character to those of the last-men- tioned county. They contain large quantities of fine calcareous sand and marl. Marl clay also underlies many of the boggy tracts, in some places to a thickness of ten feet beneath the surface, and the limestone bed; the general thickness of this bed of clay is one foot only. The average depth of the bogs is thirty feet: they contain the same vegetable matter and subsoil, and are reclaimable by the same means as those of the other midland counties. The sandstone is said to be equal to the best Swedish ore, and to be associated with coal-shale; but the traces of coal in the district ought probably to be referred to the deposits of the Drumkeerin basin. Loam or gravel has been found in the quarries in the limestone district, and exposed in the beds of streams, but no workings have hitherto been attempted. Marble is raised in the vicinity of Ballymahon: and slate in the same locality.

Soil, &c.—From the great quantity of bog and surface-water in the western part of the county, the soil in this district is not equal to that of the tract sloping towards the valley of the Inny. Here the characteristics of the lime- stone plain are found in a rich vegetable mould, producing heavy grain crops or sweet fattening pasture. The rest of the county is chiefly grazing land. Great quantities of butter are made by the farmers and cottiers. Pigs are reared in great numbers. The feeding of sheep is not much in vogue in this county. The market-towns are defective. About 20,000 barrels of oats are annually sold in the market of Granard, and about 2600 barrels at Edgeworthstown. At Ballymahon and Longford are also brisk markets for the sale of wheat, oats, and barley. The condition of the working days in the year, is the amount of wages stated for agricultural labourers in this county, in the Appendix to the Report of the Commissioners to inquire into the Condition of the Poor in Ireland, their wages being determined in great measure by the want of regular occupation and inefficient return for their occasional employment has added to a spirit of recklessness, the effects of which are apparent in the criminal returns.

The linen manufacture is carried on in some activity in the neighbourhood of Newtown Forbes, where the first Earl Granard took pains to introduce it. The manufacture of coarse flannel and froze for home consumption is also attended to throughout the county. In 1831 there were in Longford 4 brothels, 12 hawkers of flax, 12 tanners, and 553 weavers of linen and woolen fabrics.

The only seats of the nobility are Castle Forbes, the residence of the Earl of Granard, and Longford Castle, of the Earl of Longford. Carrickglass, the seat of the Lord Boyne, family, near Dublin, the mansion is now in repair, there are extensive demesne; so also have Cloonfin, Lissard, Fox Hall, Dryo Hall, Castlecore, and Newcastle, which three last are in the vicinity of Ballymahan.

Droghan, &c.—Longford is divided into the baronies of Longford, on the north-west, containing the towns of Longford (pop. in 1831, 4516), Drumlish (pop. 574), and Newtown Forbes (pop. 537), and the villages of Cloondra (pop. 214) and Ballinamuck (pop. 165); Granard, on the north-east, containing the town of Granard (pop. 1324), and the villages of Abbeyshrule (pop. 316), St. Johnstown (pop. 255), and Ballymahon (pop. 229); Ar disag, on the east, containing the town of Edgeworthstown (pop. 1001) and the village of Ardagh (pop. 145); Abbeyshrule, on the south, containing only the town; the southern counties of Longford, are Longford, Lanesborough, Granard, St. Johnstown, respectively. The representation is now limited to two members for the county. In 1857 the constituency consisted of 1385 voters. The town of Longford is the county coroners and general quarterly sessions at Longford and Ballymahon.

The constabulary force on the 1st of January, 1836, consisted of 4 chief constables, 21 constables, 117 sub-constables, and 5 horse; the cost of supporting which establishment was 5490. The town of Longford is not chargeable against the county. The number of persons charged with criminal offences, who were committed to the county gaol in the year 1836, was 607, of whom 357 were males and 50 females, being in the proportion of one per 100 persons of both sexes.

The district lunatic asylum is at Maryborough, in Queen's County. The proportion paid by Longford towards the expense of its erection is 49871 ls. 3d. The county infirmary is at Longford, and there are dispensaries at Granard, Ballymahon, Edgeworthstown, and Keenagh. The barracks are at Granard and Longford, together affording accommodation for 400 men and 200 horses.

Longford town is incorporated by charter of 26th Nov. 1824, at Car. I. II. The town is wholly surrounded by the suburbs and villages of Lanesborough, and is traversed by the Shannon, which terminates the Grand Canal on the southern side, in which direction several new streets are laid out. The Earl of Longford has recently built a butter-market and shambles. There are branches of the Bank of Ireland, the National Bank, and the Agricultural and Commercial Bank, established here.

Lanesborough has also a charter of the 17th Car. I., but
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the governing body has not exercised any corporate functions since the Union. Its situation, with a bridge over the Shannon, is favourable to trade, and it has a brisk market for agricultural produce. Great quantities of eggs pass through Lanesborough by the Royal Canal to Dublin and the English markets.

The town is incorporated by charter bearing date 4th April, 3rd Carl I.; but there are now no traces either of the corporate jurisdiction or of the lands bestowed for its establishment.

Granard, erected into a borough by charter of Charles II., in 1697, is a well-built town, consisting chiefly of one wide street, about a half a mile in length. The remains of old Granard, a place of great antiquity, are still traceable a little distance to the west of the present town. A lofty carnforth, the summit of which is 393 feet above the level of the

sea, and about 150 above the surrounding plain, stands at the eastern extremity of the present town, and commands a fine prospect over the extended plains of Meath, Westmeath, and Longford.

Ballymahon and Edgeworthstown are rather large villages than towns. Both are centrally situated, and have built markets for grain.

The village of Ardagh, containing 143 inhabitants, bears the name of a bishop's see in the province of Armagh. The see, which was founded in the sixth century, was united to the bishopric of Kilmore in 1653; and that union being dissolved in 1722, annexed to the archepiscopal see of Tuam, the archbishop holding it as a suffragan of the primacy. By the provisions of the Charter Temporals Act, the see, on the demise of the present archbishop of Tuam, is to be reunited to Kilmore.

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nyssus of Pergamum, who is mentioned by Strabo (625, \textit{Casam.}) as a distinguished teacher of rhetoric; but the difference of style between this work and the acknowledged works of Dionysius of Halicarnassus renders this conjecture very improbable, and as to the other Dionysius, the conjecture has no foundation. The treatise \textit{On the Sublime} has for its object the exhibition of the nature of the sublime, both in general and in particular, and the best translations are the German by Schlosser, the French by Bouleau, and the English by W. Smith.

LongiPennes, Cuvier's family name for the long-winged oceanic birds (Grands Voiliers), such as the \textit{Petrels}, \textit{Alcids}, \textit{Puffins}, \textit{Scopoli}, \textit{Rynchodytes}, \textit{Limmata}, \textit{Calidris} and \textit{Tringa}, Arenaria (Calidris, \textit{Vig}), Pelidna, Falcinella (Erolia, Vieill. — \textit{Scopoli}, pp. 333, Linn.), Macbeth, \textit{Heine}, \textit{Eurynome}, \textit{Phalaropus}, \textit{Stre)',' \textit{Talas}, \textit{Lobotes}, \textit{Hippolous} and \textit{Hippopus}, the latter part of which, as we have just seen, would come under the group of the \textit{Petrels}, or \textit{Scopoli}. He remarks that one can hardly place the \textit{Anserina}, \textit{Recursirostra}, Linn., in any other position than that of the \textit{Longirostris}. 

2. TRUE OR GEODETIC LATITUDE. These terms mean different things as applied to a point of the earth, or a star in the heavens; and we must accordingly distinguish between geographical latitude and longitude, and celestial latitude and longitude.

The latitude of a star in the heavens is its angular distance from the ecliptic, measured on a great circle drawn through the star and the pole of the ecliptic. It differs from the declination only in this, that the ecliptic is used instead of the equator. The longitude of a star is the angle made by the whole great circle on which latitude is measured with the circle which passes through the pole of the ecliptic and the zenith of the equator. Thus a star on the ecliptic has no latitude, and one which lies directly between a pole of the ecliptic and the terrestrial equinox has no longitude. The use of celestial longitudes and latitudes has in great measure been superseded by those of right ascensions and declinations.

The meaning of the term geographical longitude is the same whether we consider the earth as a sphere or a spheroid. It is the angle contained between the plane of the meridian through the place of the observer, and the plane of that of some meridian which is fixed on as the starting-place. Thus we choose the Observatory of Greenwich, and the French that of Paris, as being in the first meridian; and while we express the relative position of the two observatories (in longitude) by saying that Paris is $26° 53' 43''$ east of Greenwich, the French describe Greenwich as $26° 30' 27''$ west of Paris.

It is usual to measure terrestrial longitudes in time \textit{[Angle: Time]}; the whole circuit of the globe being supposed described (as in the diurnal motion) in 24 hours. It is also usual to reckon longitudes to $180°$ east or west, without proceeding farther. Thus a motion in longitude of $185°$ east will bring the traveller into $175°$ of west longitude. In astronomical writings, however, longitudes (both geographical and sidereal) are always expressed in terms of a circle, and the angle of the pole is not precisely that angle subtended at the centre by the arc of the meridian intercepted between the place and the equator. This angle is equal to the altitude of the pole of the heavens above the horizon, and the altitude of the pole is not precisely the angle subtended at the centre by the arc of the meridian. But however the altitude of the pole is called the latitude of the place; and it must be distinctly understood that a latitude, astronomically determined, is the angle made by a line which is vertical at the place with its projection on the equator. The angle subtended at the centre of the earth by the arc of the meridian is less than the latitude of the pole by a number of seconds equal to

\[ \sin \theta \times \sin \phi \times \sin \phi, \]

where \( \phi \) is the \textit{Ellipticity}. Assuming this at $30°$, the above is such a proportion of $114°$ as the sine of twice the latitude is to unity.

The reason why the process is not of more importance in the construction of maps lies in this, that when a large portion of the earth is mapped, the scale is necessarily too small to make such an error of any consequence; and when a small portion of the earth is taken, the error is nearly the same in every part of the map, and relative positions are not sensibly affected.

The method of finding longitudes and latitudes is given in the next article. The history of this problem, or rather of that of finding latitude in particular, divides itself into two portions. The first, or the accuracy of the present process; and the second, or the progress of the problem, is so mixed up with the history of astronomy and horology, that it would be useless to attempt it within any limits which we could afford: the second is that of the speculators who have misunderstood the problem, and is not worth the recital. Since however there are some persons who imagine that some mysterious method is yet attainable, by which the longitude is to be found, and since the conductors of the newspaper press are not all sufficiently instructed in the nature of the problem, we shall briefly point out the source of the fallacy which has misled so many persons.

The determination of the longitude requires simply accurate instruments, and the measurement of the heavens, the heavenly bodies, and one or other of the following — either perfectly correct watches, or perfectly accurate tables of the lunar motions. The legislature of Queen Anne, which passed an act offering a reward for the discovery of the longitude, has now been long since repealed, and the reward has been revived, for want of one or other, good watches or lunar tables, never contemplated the invention of a method, but only of the means of making existing methods sufficiently accurate. And the legislature of George III., which required that the formulae of the globe and the heavens, in which longitude is computed, should be exact, has not attempted to purchase a sum of money for further improvements.

Many persons, imagining that, as in the ease of the quadrature of the circle, &c., a theoretical difficulty existed, which required the employment of a method, imagining that they should obtain the means of getting at longitude by the observatory. Some persons still occupy themselves in this manner; and it is impossible to persuade them either of the repeal of the acts of parliament, or of the having misconceived the difficulty, which is now, for all practical purposes, entirely conquering any attempt to find the latitude of a place without knowing the position of the equator in the heavens, or the longitude without knowing the meridian of Greenwich. The equator has a real existence in the heavens, since its pole is the immovable point of the heavens, which can be detected (though it is not absolutely occupied by a star) from observation of the motion of the stars, which always preserve their distance from the pole. But the meridian of Greenwich, a purely arbitrary circle of the earth, is nowhere fixed, but merely by the will of Charles II. that an observatory should be built on a certain hill near London, has no representative in the heavens. The only method then of finding longitude from the heavenly bodies is by finding the hour of the day at which a certain star passes, by placing that star as near as possible to the point of the heavens whose longitude is required. It is then known how much of $360°$ is traversed through the earth in the period which brings a star from the meridian of the place upon the meridian of Greenwich, or \textit{ecliptic} : and this angle is the longitude that is wanted. A watch which would enable us to know where Greenwich will carry the time at that place all over the world; or a celestial phenomenon, of which the Greenwich time may be predicted, will, if the moment of its happening be observed at any other place, give the difference of times at the moment of observation. Any proposal for finding the longitude astronomically, which does not depend on one
or the other of these principles, is useless, unless it be that of actually measuring the distance between the given place and Greenwich, the latitudes of both being known. Whether it be possible to use any other than astronomical means for the purpose, it would be presumptuous to decide; but there certainly was deriv’d method which offers the most distant prospect of success.

**LONGITUDE AND LATITUDE, METHODS OF FINDING.** We shall classify the various modes of determining geographical latitude and longitude partly by the instrument employed, partly by the nature of the phenomenon. The problems are of course the same whatever instrument is employed, for the latitude of a place is the altitude of the pole of the heavens at that place, and the longitude is the difference between the time on that meridian and that of the prime meridian (see all always supposed to be Greenwich, or the first meridian) and the time at the place, at the same physical instant.

**Determination of the Latitude at Fixed Observatories and Independently.** In determination of the latitude of fixed observatories which are furnished with accurate circles, mural, transit, or altitude and azimuth circles [Circle], the altitudes or zenith distances of circumpolar stars are observed above and below the pole. When these are properly reduced, the place of the pole (which lies between the places of upper and lower culmination of each star) is known, and hence the latitude is found. The first object of all astronomers is to fix the latitude of their place of observation, and the details of this operation will be found in the case of most astronomic observatories, published in the form of observations. The account of the latitude of Greenwich in the Greenwich Observations for 1536, p. lxxvi., of Cambridge in the Observations for 1833-4, and of Edinburgh, 1834-5, may be consulted by those who wish to know what is the posture of the same place, in the most perfect means which we at present possess.

2. Again, if the altitudes or zenith distances of the sun be observed several days before and after the summer and winter solstices, the altitude or zenith distance of the sun at each of these times may be deduced. When the tables of refraction have been perfected by Bessel, these observations give a satisfactory latitude. Both methods may be considered to be independent, as they do not draw their data from other observatories, and no great accuracy is required in the solar tables to reduce the observations of the sun to the solstice. (Pond’s Lat., Greenwich Observations, part v.)

In the observatories of Europe, and generally where the view of the horizon is not high, the latitude is best determined by circumpolar stars: no two equator an independent latitude must be deduced from circumstellar observations.

3. Before the introduction of circles, the latitude in fixed observatories was determined from combining two instruments, the mural quadrant and the zenith sector. The zenith distances of stars near the zenith, and to the north or south of it, were observed by the zenith sector, and also the distances of the same stars from the pole or the equator by the quadrant; and the arc between the pole and zenith (the co-latitude), or between the zenith and equator (the latitude), was deduced. The place of the pole was found on the north quadrant from circumstellar stars, and the place of the equator on the south quadrant, from observations of the sun near the horizon, which have been accurately determined. When the present zenith tube was erected at Greenwich, one of its intended uses was to perform the same office for the mural circle as the original zenith sextant did for the quadrants.

**Determination of the Latitude Differentially.** — 1. The zenith sector in the present and former observations, is perhaps the most accurate instrument for determining latitudes differentially, i.e., assuming data which are either known or can be obtained from fixed observatories. With this instrument, the meridian zenith distances of several stars which pass near the pole, may be observed with great certainty; and as the polar distances of those stars are or may be determined at first-rate observatories, the polar distance of the zenith, or the co-latitude, is known. The latitudes for the trigonometrical survey of Great Britain are thus deduced by comparison with Greenwich, the instrument employed being a very fine 8-foot zenith sector by Ransdell. With a better knowledge of the proper motion of the stars, the sector might be used at two places, and the arc between those places obtained from observations of the same stars at two epochs, without reference to any other observations; but at present it is safer, when practicable, to refer directly to corresponding observations made at a fixed observatory.

2. Another differential method has lately been much used (at least by continental astronomers), in which the transit instrument is employed. [Transit.] The axis of the instrument is placed north and south, and carefully leveled, in which case its line of sight will describe the prime vertic. In the figure, let P be the place of the pole, Z the zenith, RZW the prime vertical, which is also the line described by the middle wire of the telescope when it revolves. Let a, b, c, ... be the places of the polar distance stars observed at S and S', and the times noted. Then PS, the polar distance of the star, Z, is known, and the angle S'PS is equal to the time between the observations and consequently $S'PS$ or $SPZ$, is known; hence the position of the star. We may take the equilateral triangle SPZ, and $\tan PS = \tan PS' \times \cos SPZ$, from which $PZ$, or the co-latitude, is obtained. This is perhaps the most accurate mode of determining the latitude with moderate instrumental means. The transit should be revolved on alternate nights, not in a set of the polar distance or as well collimation or unequal pivots, and the level applied repeatedly before and after the observations. The method depends mainly upon the delicacy of the level and the perfect truth of form in the pivots, and when all precautions are taken the results are surprisingly good. The support of the instrument must also be perfectly steady during the levelling and the observation. Differences of latitude may be determined by the transit instrument independently, by observing the same stars at two stations. In the case any error in the assumed polar distance of the star will not affect the accuracy of the result.

3. If an observer can carry with him a circle, either an altitude and azimuth, or a repeating circle, he may determine his position by circumstellar means, but it is better to observe the zenith distances of well known stars several minutes before and after they pass the meridian. [Circle; Repeating Circle.] The reduction to the meridian is easily computed [Repeating circle]. The tables of the Almanac are sufficiently accurate. It is advisable to observe stars at different zenith distances from 70° to 90°, in the direction, so that if there be any fault in the instrument which depends on the zenith distance, the star will be affected similarly on both sides of the zenith, i.e., the zenith distances to the north and south will both be too large or too small. Now as the co-latitude is equal ± the zenith distance ± the polar distance when the star is north of the zenith (+ when observed above the pole and - when observed below), and is the zenith distance when the star is south of the zenith. It is clear that an error in the zenith distance will have precisely opposite effects on the co-latitude deduced from a north and a south star. Besides, the coincidence or disagreeance of the observations with the position of the instrument and the observer, and of the value of the final result. The repeating circle was at one time over estimated, and perhaps at present is not quite rated at its true worth, a careful and intelligent observer will consider very great, and for observers who do not understand the reason of the thing, 10° on each side of the meridian is a sufficient division.
notes the time. Neither can they be considered as portable in ordinary circumstances, when large enough for convenience. This is not so, since the instrument of thirty or more inches in diameter is not less than twelve inches in diameter in either construction. On the whole we are inclined to prefer the repeating circle as a travelling instrument, and the altitude and azimuth for a permanent situation; but it must be confessed that few observers can be placed or supported in a level horizontal position, except by very skilful and expensive apparatus, that the observations should be confined to stars, as neither of these instruments will keep the adjustments well under the sun.

The repeating circle was used by the French astronomers to determine the position of the horizon. Sometimes, if the stars were not seen at the time, the stars observed for many years after the time of the observation of the sun, moon, or another planet, or for a month, served as guides. It is seen that the time the instrument has been much better made, and the catalogues of stars which have been issued from Königsberg, Greenwich, and Cambridge, and many others, have supplied more accurate and convenient means of using it. If the levels are very good and sensible, and the observer is very skilful, everything being favourable, the latitude should be brought out within 2° or 3°.

The last class of instruments to be noticed is that of reflecting instruments, including the reflecting circle of Troughton. The sextant of Hadley. These will be described under the article Sextant, as the title best suited to their essential quality of reflection. At present we must suppose a general knowledge of their nature. And first we will suppose the observer has the instrument in hand. In this case, standard stars should be observed several minutes before and after the meridian passage to the north and south, between the altitudes of 15° and 60°, and as much as possible in pairs, that is, for each star to the north, a star in the south, so that the altitude of one will be the opposite of the other, or, two, one higher and the other lower, so that the mean altitude should nearly correspond. Whatever errors may exist in the division, glasses, &c., will be the same in each of the pair, and as long as the instrument will affect the altitude differently, the latitude will be free from the error very nearly. In this way several pairs may be observed, taking the stars of the 'Nautical Almanac,' and the mean of the whole will come out very near the truth. With a good sextant, observations sent to London every month, and careful observers would get the latitude within 5′, in one fine night. It is however supposed that everything is favourable, and especially that the instrument is supported on a stand. This is absolutely necessary for the accurate observation of stars, which cannot be permitted unless the instrument is held in the hand and a high power applied. If a stand cannot be afforded, the sun is the best object to observe with a reflecting instrument. It is always supposed that the observations are made by a reflecting instrument when the sun is passing, and the time noted for computing the reduction to the meridian. The meridian altitude of the sun, such as it would be if observed on the meridian and free from instrumental and other errors, is then computed, and as the latitude is the altitude of the sun above the horizon, it is readily found, and, with great accuracy, should be equal, so as to get rid of the index error. With the repeating reflecting circle, the observations should also be of the sun, and the limb should be set as much as possible opposite the circle, so as to get rid of the index circle. With the sextant the index circle should be carefully determined before and after each day's observations, and the alternate line observed exactly as with the circle. The sextant however has no way of getting rid of eccentricity in the sextant by observing one object, and any fault in determining the index circle will vitiate the latitude to half its amount. While the circle will probably give a latitude to nearly 3°, with a very short period of observations of the sun, the sextant used with equal care might be out 10″ to 15″. It is evident therefore, that where accuracy is an object, the observer ought, if possible, either to use a circle or to mount the sextant upon a stand, and observe stars as we have above described. This is a process which from Galle's time, it is practicable, that in low latitudes the sun cannot be observed at all for the latitude, nor any object which is elevated 65° or 70°. In this case stars must be used; and without a stand, the observation, using high magnifying powers, is difficult and unsatisfactory. In speaking of the loxozon at sea, we shall always speak of Greenwich, or any place the latitude of which from Greenwich is known, and it is more convenient to classify the methods of finding the longitude by the phenomena than by the instruments.
Determination of Time at the Place.—1. This is best and most easily done by a transit instrument, and the time, when found, is kept by a clock or chronometer. [Transit.] The transit however is neither a very portable instrument, nor is a proper instrument for it, we mean one portable. Thus let P be the pole, the eastern star causes twice the error in the deduced hour angle that a similar error of 1' does in the western star; the concluded true error shows a mean error 26'.5. The reader will see that if the observations are made at exactly the same altitude, any mistake as to the index error, refraction, or any instrumental defects will be a good deal without much trouble. But, as has been mentioned before, very perfect observations of an index error with reflecting instruments can scarcely be made unless the instrument is mounted on a stand. From good sets of observations of a star east and a star west, the time may be determined to 0.3 or 0.4. The time is required to reduce cirecum-meridian observations to the latitude, and the latitude is required in order to deduce the time from the altitude. An approximate altitude, such as results from the largest observed altitude about the meridian, will give the time near enough for the reduction of the latitude, and then the time may be computed rigorously with the exact latitude. Provision may be made for this revision by taking out the differences of the logarithms at each step of the first computation; but generally speaking, when the altitudes for time are taken near the prime vertical, as they ought to be, a small error in the latitude has so little effect on the hour angle, that the approximate latitude is near enough.

3. Determination of Greenwich Time astronomically.—1. There are two phenomena which are seen at the same moment from whatever part of the earth they are visible, viz. a lunar eclipse and the eclipses of Jupiter's satellites. The first was the only phenomenon from which longitudes were determined prior to the invention of telescopes, but it is not so frequent occurrence, and the observation was made very exactly. It has been proposed to measure equal quantities of the eclipse on each side of the middle, and formerly astronomers were very careful to note the moments when the umbral ring first or covered well-defined spots. But at present, lunar eclipses are selected among all others in the way most accurate of determining the longitude, and of more frequent occurrence; and lunar eclipses are of no value in the theory of the moon's motions. The eclipses of the satellites of Jupiter are much more common and have been used with great use in modern geography. The time at which the eclipses take place, i.e. when the satellite, passing into the shadow of Jupiter, is last (merges), or passing out of the shadow, becomes visible (emerges), are set down in the 'Nautical Almanac' at the time they would be seen at the place of observation. This information is of great use to an observer at any other place notes when this phenomenon does actually happen at the place of observation, and the difference between the two times is the longitude of the place from Greenwich; east if the time of the eclipse is later than at Greenwich, and west if earlier. The redetermination of this method, so easy in practice, is by no means as accurate as it might at first sight appear. The theory of the satellites is scarcely to be considered as perfect, but this objection might be obviated by comparing corresponding observations, and might be very much reduced by considering the predictions of the 'Nautical Almanac' by observations made at Greenwich, or any other well known place, about the same time. The phenomenon is a gradual and not an instantaneous one, and the appearance or disappearance of the satellite varies greatly with the place of the observer, the eye or mood of the observer, the atmosphere at the place of observation, and so on, that a longitude deduced from an eclipse of the first satellite may be considerably wide of the truth. With ordinary telescopes we believe that eclipses of the second satellite are more than twice as uncertain as the first, and that the third and fourth satellites are not worth observing for this purpose, being much inferior to good lunar distances. A large mass of eclipses of Jupiter's satellites is required to determine the longitude, the same telescope and the same observer, and where the immersions and emersions, will however yield a satisfactory result. The aperture of the object-glass employed, and also the sight of the observer, should correspond as nearly as possible with that of the observer at Greenwich, or whatever place is adopted as a standard of comparison. It is not advisable to use a smaller telescope than an achromat of 2½ inches aperture for this purpose, or one larger than 3½ apertures.

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The computations are rather long, but not very difficult or arduous. The beginning and end of the solar eclipse should be observed; the latter is the better marked phenomenon, and if the eclipse be annular, the commencement and breaking up of the annulus. Observations have shown that these appearances are not instantaneous, and therefore that longitudes deduced from them are not free from uncertainty. The occultation of a fixed star by the moon is liable to this objection; and when the star is bright, and both immersion and emersion can be easily observed, the longitude from an occultation affords perhaps the best determination possible of the longitude between two distant places. Yet even here doubts may arise, at least until it be ascertained, and its apparent motion, whether in a lunar mountain, or disappear too late in a lunar valley.

The occultation should be observed at both places, which is not often possible, and the star should pass not far from the centre of the moon. If the solar eclipse or the occultation be made among well determined observatories, the data of the "Nautical Almanac" must be corrected by the meridian observations of the moon about the time. The tables of the sun are at present nearly as perfect as observation can make them, but the moon may be more uncertain in their trouble in the near that part of the earth, and the transit of the 30th or 40th in the deduced longitude, or from an eighth to a sixth of 1°. The solar eclipses, &c., with a map showing what parts of the globe they are visible, are given in the "Nautical Almanac," and the occultations by the moon of a few of the brightest stars above visible below the observer at Greenwich, are also predicted to the nearest minute, with such a description of the relative situation of moon and stars as will enable any one to observe them without difficulty.

All possible occultations of fixed stars to the fifth magnitude require a little more work, and a table, and a methodical circle or sextant. The computations may be made at home. It is mortifying to see how very little has been done by English travellers for the exact observation of the method, and the difference between the observations made there and those made at home. The execution of this work at home is very necessary, and it is impossible to observe without it. The longitude of the sun is determined with great accuracy by the observations of the moon, and also the value of the meridian of Greenwich, &c., by comparing the longitude with the observations of the moon. The case is therefore removed from the observer to the observer, and the observer to the observer. As a nation we have shown abundant zeal and courage, but there has been a lack of elementary knowledge in the principles of the science, which is occasioned by the observer, and in the observers selected, which ought to be remedied.

The transits of Mercury over the sun are rare, and the longitudes derivable from them not very accurate. 3 A good and now fashionable method of determining the longitude is that of observing the mean place of the moon's bright limb, and of stars which are near her parallel of declination. The "Nautical Almanac" contains a list of the stars proper to be observed with the moon, and also the variations of the apparent place of the moon, &c., for computing the longitude. When the place of observation is tolerably near Greenwich, the computation is very simple, if the transit is nearly in the meridian and the moon is observed over all the stars. The error of the chronometer is taken from the nearest mean place, and the transit of the moon corrected for this error, and for the rate, if sensible. If the place be to the east of Greenwich, the R. A. of the moon is less; if to the west, the R. A. is greater than at Greenwich, and as these are the variations of the moon at the place and at Greenwich, and dividing by the observation one hour of longitude, you have the longitude of the place E. or W. in hours and decimals of an hour. But this method requires correction when the corresponding observations are known for the place, and the moon's mean place, &c.; for the R. A. of the moon may be erroneous more than 1° from the imperfect of the lunar tables, and the stars may not be perfectly well determined, though that fault is daily disappearing. By using the R. A. of the moon and stars observed at Greenwich, the longitude will not be affected by the errors of the tables. It is pretty much the same thing, and at times more convenient, to let the former computation stand, and to compute the longitude of Greenwich, Cambridge, &c., from the observations respectively made there, taking care to note the signs of the moon's place when the It is not necessary to state the correction of the lunar tables, and the moon's place, &c., for the position of the transit. Now any considerable error in the position of the transit does occasion an equivalent error in the longitude, and though it can be corrected, if there are data for determining the want of adjustment, this gives the result with a greater number of stars. The apparent place of the moon is therefore corrected by observing the second limb as often, if possible, as at the first, and then, keeping the results separate, by taking a mean of the two. There is a mistaken notion that the longitude of the moon is not to be computed by using the observation at either of the two positions at the position of the transits. Now any considerable error in the position of the transit does occasion an equivalent error in the longitude, and though it can be corrected, if there are data for determining the want of adjustment, this gives the result with a greater number of stars. The apparent place of the moon is therefore corrected by observing the second limb as often, if possible, as at the first, and then, keeping the results separate, by taking a mean of the two. There is a mistaken notion that the longitude of the moon is not to be computed by using the observation at either of the two positions, but the second limb is always observed by the observer, and it is proper to reverse the instrument on alternate nights.

When the place of observation is very distant from Greenwich, it will be necessary, until the quantities a, b, &c., mentioned in the note, be computed, to use the dream place of the moon, and then the place determined by observing the moon's position. The place of observation is calculated as before, and then the R. A. of the moon's bright limb must be computed for the corresponding Greenwich time, from the R. A. of the moon for every hour; the moon's semi-diameter, X R. A. of the moon, &c., to be the same as at Greenwich, and the moon's place be found on the whole moon's illuminating, and therefore on the moon's bright limb on the hypothesis of longitude, one minute above and the other the minute below the approximate value. These results are to be compared with the observations, the error of the lunar tables, and then, by simple proportion, the correction is determined for one of the hypothetical longitudes. This is rather a long process, but it is strictly accurate, and the steps are intelligible as the computer proceeds. The method of determining the longitude is by assuming the moon and stars at the best places very distant in latitude or longitude, where the same occultations cannot be seen. It is nearly as good for the most distant as the nearest place, the variation of the error of the lunar tables is small, and the phenomenon presents itself very often. It does however require a very nice and well fixed instrument and a careful observer, as 1° error in observing the R. A. of the moon will cause an error of nearly 30° in the result, quantity or a of a large number of observations of both longitudes corrected by corresponding observations will scarcely be more than 2° or 3° wrong.

But where a transit instrument cannot be carried, or cannot be used, as at sea, the longitude must be found astronomically by the distance from the sun, the planet, or fixed stars, measured with a reflecting instrument. This apparent distance is reduced to the true distance, i.e. such as it would be, seen from the centre of the earth, or the sun, &c., and the result is taken from the "Nautical Almanac" for every three hours Greenwich time, as they would be seen from the same place, the Greenwich time corresponding to the time of the observation can be calculated. But the time at the place is always supposed to be the time of the Greenwich Greenwich time, and the longitude is given by the observer. The longitude may be determined on shore by lunar observations, and, if a stand be used, with much greater accuracy than at sea. All ships and travellers are likely to be well supplied with chronometers, and keeping their Greenwich time by observation they have got it, and then the result of the observation and computation is simply stated to be the error of the chronometer on Greenwich time. The chronometer, if the rate be pretty well known, continues to give the Greenwich time (the correction for error and rate being applied) for several days; and the longitude is found out, by comparing the
actual time at the place of observation with the Greenwich time at the same moment, given by the chronometer. We have supposed that the chronometers were used, but it is mere folly to rely upon one or even two chronometers in a ship, or in important geographical researches.* These are to be compared from day to day, to ascertain that they are not suddenly altering their rates, and also whenever any accident occurs which is likely to alter the mean determination of the Greenwich time (for that gives the error of each of the chronometers), or the time at the place. In reducing observed lunar distances to the true lunar distances, the altitudes of the moon and moon or moon and stars at a given time, observers are commonly set to measure these altitudes at the moment the lunar observer gives a signal that he has made the contact; indeed a fourth person is sometimes engaged in noting the chronometer. On shore this profusion of calculations is unnecessary. The altitudes of the moon and moon or moon and stars at the time of observation may be taken from tables; tantamount to the observed lunar distances, the mean determination of the latitudes and longitudes of the said places, and the mean of the whole is taken. The voyage back to Greenwich, in like manner, with the errors and rates at arrival at Greenwich, furnishes a second longitude; and if the motion at sea has any tendency to alter the rates, this error will affect the second determination with exactly the same error, but in a different sense. If it increases the difference of longitude one way, it diminishes it the other way. By a mean of such several voyages the difference of longitude may be ascertained with considerable exactness. The best determination of this kind which has come to our knowledge is the difference of longitude between Berlin and Altona. (Berliner Jahrbuch, 1839.) There are several precautions to be adopted in determining longitudes chronometrically, which ought not to be neglected. It is well known that two observers will sometimes differ several tenths of a second from each other in getting the time at the same place and with the same instrument. Now that the mean of a dozen or more observations is taken, the difference of two places will affect the longitude by exactly its amount, hence the observers should be reversed for half the time of the experiment, if possible, or their relative personal error found by comparison with each other, or, at least, with the observations of the other observatories. The perturbation of the sun's diurnal motion in ascertaining and keeping the time, of this observer must be the judge.

**Determination of Greenwich Time by Chronometers.**—(Hitherto the Greenwich time was furnished by the chronometer, the longitude of Madeira was required: then having ascertained the errors and rates of the chronometers, the error of each was compared to Madeira, and their errors on the meridian of Madeira, and their rates, determined there. The Greenland time was known from each chronometer, supposing the rate during the voyage to be the mean of the rates before and after, and the observed lunar distances taken on the voyage, the mean of the whole is taken. The voyage back to Greenwich, in like manner, with the errors and rates at arrival at Greenwich, furnishes a second longitude; and if the motion at sea has any tendency to alter the rates, this error will affect the second determination with exactly the same error, but in a different sense. If it increases the difference of longitude one way, it diminishes it the other way. By a mean of such several voyages the difference of longitude may be ascertained with considerable exactness. The best determination of this kind which has come to our knowledge is the difference of longitude between Berlin and Altona. (Berliner Jahrbuch, 1839.) There are several precautions to be adopted in determining longitudes chronometrically, which ought not to be neglected. It is well known that two observers will sometimes differ several tenths of a second from each other in getting the time at the same place and with the same instrument. Now that the mean of a dozen or more observations is taken, the difference of two places will affect the longitude by exactly its amount, hence the observers should be reversed for half the time of the experiment, if possible, or their relative personal error found by comparison with each other, or, at least, with the observations of the other observatories. The perturbation of the sun's diurnal motion in ascertaining and keeping the time, of this observer must be the judge.

**Determination of Greenwich Time by Signals.**—Another mode of ascertaining differences of longitude is that of observing the appearance of signals from rockets. Thus if a rocket is fired from station between two observatories, and the explosion noted in the time proper to each place, the difference between the times will be the difference of longitude. A chain of rockets may be extended in a meridional direction. Let the two points to be connected be A and B, and let observer with a chronometer be placed at A, and others with rockets at a, β, thus: A, a, a, a, β, B, then the c3 servers at A and B note the rockets from a and β in time, and a notes by his chronometer the rockets at a and β (supposing β at 10 minutes after α), and as he observes a at the same moment, the instant of observation, the hour, minute, and second can be exactly determined, and the mean rate of the chronometers ascertained.
Let the distance $PG$ in feet and the bearing $KG$ of the point $P$ from the observatory $G$ be known by survey, and $GN$ be an arc of the meridian. Then drawing $PK$ perpendicular to $GN$, $PK = PG \times \sin GPK$ and $K = PG \times \cos GPK$, when $PK$ and $GK$ are known, in feet.

Find the value of $KG$ in seconds of latitude approximately by supposing $1''$ to be $100'\times$ feet, and add or subtract this, as the case may be, to the latitude of $G$, which will give the latitude of $M$, the middle point; call this $n$. Then the value in English feet of a degree of latitude at $M$ is

\[
365747.7 + \text{number of the logarithm of } n = 3.5634881 + 2 \log \sin n + \text{number, log of } n = 3.0866368 + 2 \log \cos \lambda + 2 \log \sin n.
\]

With these values of a degree of latitude and longitude the distances $GK$ and $GP$ are readily converted into areas of latitude and longitude.

On this subject the reader may consult the 'Encyclopædia Metropolitana, office. Figure of the Earth.'

The solution of the problems assumed to be known in the preceding article may be found in all treatises on astronomy and in most collections of tables of navigation. We have recommended Thomson's 'Tables' as very convenient, and sufficiently accurate for the traveller and navigator, and any tables and methods which men have been accustomed to do will. It would require too much space to give reasons and explanations for the opinions here advanced, as we will give two or three recommendations which few navigators will regret to have followed. The first is to make, then practicable, large masses of careful observations, and especially to observe the rules given above in nullifying instrumental error, by making such observations that a given error will have contrary effects in the result. Secondly, in order to be careful in selecting their instruments and their timekeepers, which should come from good makers, and be carefully tried before starting, especially at such temperatures as the traveller may expect to meet with. A chronometer which is excellent for a polar region may be an indifferent watch on the Tigris or in theerras of Africa, and vice versa. For any overland expe-

dition three pocket chronometers should at least be taken, and the number must be increased according to the length, the difficulty, and the importance of the journey, and a liberal allowance made for stoppages, changes of rate, accidents, &c., as a belt of half a centimetre would scarcely be felt to be an inconvenience. Lastly, if the traveller's object be chiefly that of determining exact positions, he should be careful to determine the longitudes of all his principal points by solar eclipses or occultations of fixed stars by the moon, if possible, as he cannot carry his observatory of longitude with him. At the same time he must determine the rates of his chronometers for a new departure, and determine as much of the country as circumstances will allow by journeys of ten days or a fortnight, returning to the same place. When the principal points of longitude have been fixed, the almost instantaneous sun may be got with almost any instrument, or by any person, the chronometers will fix every halting-place where the time is observed, and this may be got in a few minutes any fine night or morning or afternoon; and then the itineraries, distance bearings, marches, &c., and all the useful information on which too much of our geography is founded, will furnish valuable details in the proper place. The necessary apparatus is not very expensive or cumbersome, and with a little practice can be managed by a moderately intelligent and methodical person.

LONGLAND, or LANGELANDE, ROBERT, the reputed author of the 'Visions of Pierre Plowman.' He was a secular priest, born at Mortimer's Cleobury in Shropshire, and was afterwards a lay chaplain to the queen. He lived in the reigns of Edward III. and Richard II.; and, as Bale assures us, was one of the earliest disciples of Wycliff. Langland, according to the same authority, completed the 'Visions' in 1369, when John Chichester was one of the lords of the admiralty of the king, and the poet of 'XX. Passus' (pauses or breaks), exhibiting a series of dreams supposed to have happened to the author on the Malvern Hills in Worcestershire. It abounds in strong allegorical painting, and censure with great humour and fancy most of the vices prevalent in the life of the age, and particularly inveighs against the corruptions of the clergy and the absurdities of superstition; the whole written, not in rhyme, but in an uncorrected alliterative versification. Of the 'Visions of Pierre Plowman' there are two distinct versions, those of London and York, the latter date later than the 'Visions,' inasmuch as Wycliff, who died in 1384, is mentioned (with honour) in it as no longer living. Of the other version of the 'Visions,' the only edition is that published as a work of Thomas Wycliff, a Burnell, 1634, London, 1613, who, in the following year, republished the 'Crede,' from the first edition of that poem printed by Reynolds Wolfe, in 1553.

(Bale's Script. Illustr., 4to, p. 150, ed. vi. p. 747; Percy's Reliques, i. 279; Pepys's Spocraft, i. 144; Whitaker's ed. of P. Plowman, Introd. Disc.)

LONGOBARDS, LONGOBARDI, OR LANGOBARDI, a nation of ancient Germany, mentioned by Tacitus (Germ., 40) as a tribe of the Suevi: he describes them as few in number, but secured by their bravery against their more powerful neighbours. It appears that they lived east of the Elbe, towards the shores of the Baltic Sea. Warmfrius says that they came originally from Scandinavia, and that their name was always known as a portion of that of Longobards, from two Teutonic words, long and bart, 'long-beards.' The Longobards joined Arrinarius against Marobodus, king of the Suevi. (Tacit., Annal., iii. 46.)

During the third and fourth centuries of our era the Longobards followed the general movement of the northern nations towards the south, and came to the banks of the Danube, where they find them acting as allies of Odoacer, king of Italy, and the inhabitants were added to their kingdom when the region was conquered. The Longobards after their total defeat and almost exterminated the Heruli; and about the middle of the sixth century they occupied part of Pannonia, under their king Audoin, known to history as their subjection to the Visigoths the Upper Danube, a nation settled in Dacia, on the borders of the Dacians. (P. C., No. 869.)
Eastern empire, and which the Longobards, with the assistance
of the Avari, a tribe of the Hunni, totally defeated.

In the year 568 Alboin crossed the Julian Alps, near
Forum Juli, and led the Longobards to the conquest of
the plains of North Italy, which have ever since been
called by the conquerors, Longobardia, a name which
came the capital of the Longobards. Together with the
Longobards there came into Italy thousands of men of other
tribes, which followed the standard of Alboin, namely,
Saxons, Suevi, Gepids, Bulgarians, Pannonians, Sarmatia-
ns, and others. (Warnefrid, b. 470.) Alboin, the last
of the kings of the Longobards elected Cleso as his suc-
cessor, a.d. 573; but on his being murdered by a servant,
eighteen months after, the nation became divided among
a number of dukes, a duke of Ticino or Pavia, a duke of
Friuli, a duke of Trento, a duke of Besana, besides three
dukes in so many other cities. Under these dukes the
Longobards penetrated south of the Apennines,
and conquered Tusey, Liguria, Umbria, and part
of Campania. The Byzantine emperors retained Ravenna,
Rome and its ducal territory.

Tho, the southern extension of Italy with Sicily.
'Vealth the government of the dukes,' says Warnefrid, 'was very
oppressive to the Roman or native inhabitants, many of
whom were put to death, and of those that survived
the third part of their incomes and obliged to pay tribute
for the rest.' After

ten years of this disorderly dominion of the dukes, the
Longobards chose for their king Avarius, son of Clefo, 586
—92. His reign was prosperous; he repulsed the attacks of
the Saxons on the one side, and of the Byzantines on the
other; and he carried his arms into southern Italy, where
he founded the dukedom of Benevento. After the death
of Avarius, his widow Theodelinda, who was a daughter of
the king of 602 Arturis, or Bavaria, married Agilulfus, duke of
Turin, who acknowledged the empire of the Longobards under
themselves. Agilulfus, through the persuasion of his wife,
became a Catholic, most of his countrymen being Arians,
and made peace with Gregory the Great, bishop of Rome.
Theodelinda built the church and palace of Monza, where
was crowned a sovereign in a nation whose crown (the
Saviour, which is riveted inside of the crown), has served ever
since for the coronation of the Kings of Lombardy. Agilulfus
became pope, Padua, and other towns which still sided with
the Eastern emperor. Truces were repeatedly made be-

tween the Longobards and the Byzantines of Ravenna.
Agilulfus died in 615, and was succeeded by his son Ada-
Laodocus, under the regency of Theodelinda. Ada-
Laodocus, ten years after, having lost his mother, was deposed, as
the children of the house he was acknowledged to have been
elected in his stead. Little or nothing is known of Ari-
valdus, except that he reigned twelve years, and died a.d. 636.
It was under his reign that Columbanus, the Irish monk
and missionary, after passing through Italy and Rho-
cnia, retired to Italy; he founded the monastery of Bobbio,
near the Ligurian Apenines, which afterwards became
celebrated for its wealth and its collection of MSS.

After the death of Arivaldus, Rothe, son-in-law of
Agilulfus, was elected in his place. Rothe was the first
who gathered a compilation of the unwritten laws and
usages of the Longobards, and published them in a kind of bar-
barian Latin, under the name of Edict, with his own preface
and observations. This edict drew a marked distinction
between the dukes and the bishops and the Longobard
nation, which continued to live under the Roman law.
The distinction between the two races, the conquerors and the
conquered, seems to have continued until the fall of the
Longobard dominion. By a subsequent law of King Liut-
plundus, the race on one side, and of the Longobards on the other,
compensation was awarded for most personal injuries, in-
sults, wounds, mutilation, and for homicide. Adultery
and theft were punished with death. Emigration was for-
bidden, and sedition or mutiny was a capital crime. The
judges were to be independent, and enjoined to decide causes within a limited number of days. Single combat or duelling was tolerated, though its
practice was characterized by Liutprand as absurd. Upon
the whole, the laws of the Longobards were among the most
rational and equitable of those of the northern nations
which divided among themselves the ruins of the Western
empire, and as such have received the commendation of
Montesquieu, Gibbon, Johann Muller, and others.

With regard to the political system of the Longobards, it
may be considered as a form of government under an elective
king, who was the chief of the nation, something like the sub-
sequent confederation of the German empire. When Avarias
was elected king, the dukes in a general assembly agreed
to give one half of their revenues for the support of the royal
family and his exchequer. This was the extent of the
kings' domains in their respective dukedoms, each making wars
and conquests on his own account, as appears by the chronicles
and also by the letters of pope Gregory the Great. We
have a duke of Benevento extending his conquests as far as
the Po, and a duke of Spoleto, Adaloaldus, near
Brescia, and the dukeds of Friuli repeatedly engaged in deadly
warfare against the Avari and Slavonians, without the rest
of the Longobards, or the king himself, intervening as
parties in these quarrels. The orders and enactments of the
king required the sanction of the people or army (for
the two words are used as synonymous) of the Longobards.
The king was supreme judge and commander, but not ab-
solute legislator. These relations were maintained with
very great respect. The king, it is said, was never required with regard to the treatment of their Roman subjects.

The case was somewhat different. Several modern writers
Giunone, Muratori, Denia, Bossi, and others, have
considered the Italians, or ' Romans,' as they were called,
were the conquerors and the Longobards, who having
reduced the Longobard masters; but Mantoni, in a
very sensible and soberly written dissertation on the sub-
ject, has dispelled this delusion. (Duscerno sopra alcune
parti della Storia Longobardica in Italia, annexed to Man-
zione della Storia antica.)

The ' Roman' or Italian subjects of the Longobards
were looked upon as a conquered and subject race, not
exactly like the Helots at Sparta, but still they had neither
the same political nor civil rights as the conquerors.
These were the subjects of the Longobard dominion
against the caprice of their Longobard rulers; they lived
among themselves according to the Roman law, but in
affairs between them and the Longobards they were judged
by Longobard judges and according to the Longobard
law.

Rothe, having conquered the towns of the Thucia
nensis, or Riveria of Genoa, and defeated the troops of
the exarch of Ravenna, died a.d. 653, and was succeeded by his
son Rodolfo, who a year after five years' reign was killed by
his nephew of queen Theodelinda, being elected in his
place to reign till the year 661, when he died, and his two
Perthiratus and Goderbus divided the supreme author-
ity. They quarrelled, however, against his brother, who was obliged to run away, but Goderbus
himself was killed by Grimauldus, a chief from Benevento,
who took possession of the crown. a.d. 662. Grimauldus
was an able and warlike usurper. He defeated the Fre

a who had entered Italy, and had advanced to near
near Avaria. Shortly after, Constans ii., emperor of Constantinople,
and grandson of Heraclius, having landed with an army at
Ancum with the intention of recovering Italy from the
Longobards, took Luceria, and laid siege to Benevento, in
which, the Longobards had fixed the seat of their empire to
the number of the inhabitants. Alboin was subjugated by
albadius marched with an army to the assistance of his
and obliged Constans to raise the siege and retire to Nara.
Constans afterwards went to Rome, which was still sub-
jacent to the Eastern emperor, and took away the ornament
of the Longobards. He then returned to Benevento to the
envy of the emperor, who, however, after every event, against
himself was defeated by the Longobards and the
war broke out. The emperor was defeated and
his son, the emperor, was found in Cadiz, where he
was deposed and executed. The Longobards, having
reconquered the province of Italy which was still subject to the
Benevento, again invaded the kingdom of Benevento or
race. Pippin, a son of Liutprand, was deposed. The
Longobards. Under the reign of Grimoaldus, Alboin
or Aliseck, a chief of Bulgarians, emigrated to Italy with his
tribe, and put himself under the protection of the Lo-
ngobard king. The king sent him to his son the duke
of Boianum, Spumium, Asernia, and other places in
the country of Samnium, which had remained desolate since
the war.

Warnefridus (b. ch. 29) adds to
the descendants of those Bulgarians continued there in his days, and although they spoke Latin, had not lost the use of the language of their ancestors; a remarkable passage, which shows that the general language of Italy in the time of Charlemagne was still the Latin, and was adopted by the northern tribes which settled in the country.

Grimaudo added several chapters of laws to the edict or compilation of Rothar, and after a successful reign of nine years he died at Rome. His biographer was the monk

Pertharitus, who had wandered as far as England, returned, and by universal consent resumed the episcopal see. Pertharitus reigned seventeen years, and died in 688, leaving his son Conipertus, who had married Ermelindis, an English princess, and to his own election as archbishop of Ratisbon, the capital of the Alamanni, but he returned, defeated and killed Alaisch, and resumed the crown. In the meantime Romanus, duke of Benevento, took Tarentum and all the neighbouring country from the Byzantines, and annexed it to his dominion by his matrimonial relations. His infant son Limpertus was put to death by Arpiertus, duke of Turin, who assumed the crown. Asprandus, whom Conipertus had appointed guardian to his son, fled into Beira with Liutprand, the son of Asprandus. Nine years afterwards, he was defeated and slain by Liutprand and his men, and after a battle, in which Arpiertus was drowned in attempting to cross the Ticinus, Asprandus was acknowledged king of the Longobards; he died soon after, and his son Liutprandus succeeded him by common consent.

Liutprandus reigned thirty-two years. He was the most illustrious of the Longobard kings. He took Ravenna and the Pentapolis, but afterwards made peace with the Byzantines and restored Ravenna, was friendly with the pope, and often came to Rome, where at that time he was elevated from the Eastern emperors in consequence of the claim of the Iconoclasts; and he was also friendly with Charles Martel, to whom he sent assistance against the Arabs, and gave them two years of the Longobard land, and raised many churches and other buildings. He was, says Varro, "valiant in war, but fond of peace; of forgiving disposition; although destitute of learning like most of his countrymen, yet gifted with judgment and perspicacity, and with a regard for the welfare of his people, and a legislator." His laws are joined to those of his predecessors Rothar and Grimald, in the collection of the laws of the Longobards. Liutprand died in 744, and was succeeded by his nephew Haberland, who was deposed a few months after his death. In 785, when Ratchis, duke of Friuli, was elected king, Ratchis, after five years' reign, voluntarily renounced the crown, and went to Rome, and afterwards to Monte Cassino, where he became a monk. Ratchis was succeeded by his brother Mathiarius, who had been a mathematician. His dominions were peaceful as long as Zacharius, a prudent and upright pope, continued to live. After the death of Zacharius, Stephen II. succeeded him, who began to intrigue with Pepin, king of the Franks, who wished to extend his power into Italy, and settled on almost indubitable ground; 3rd, his property in cities, and put an end to the dominion of the Exarchs, attacked the duchy of Rome, and aimed at subjecting that city also to his authority. Pepin came twice to the assistance of the pope, and each time defeated Astolphus near Pavia, and obliged him to fly to Ravenna. The Pentapolis, and other towns, which Pepin is said to have then possessed upon the Roman see. This donation however has been a subject of much controversy: the instrument he is said to have signed is a forgery. Pepin died in 756, and Desidarius, a Longobard duke, was elected his successor. Desidarius renewed the quarrel with Astolphus, and not only seized the towns given up by Astolphus, but likewise devastated the duchy of Friuli and the entire country. The war lasted three years. Charlemagne came into Italy A.D. 774, defeated Desidarius, and carried him prisoner into France, where he became a monk. Adelchis, son of Desidarius, fled to Constantinople, from whence he returned to Italy with some troops, was defeated in battle. The kingdom of the Longobards ended with Desidarius, and the Longobard nation and its territories became subject to Charlemagne.

The political system of the Longobards was weak: 1st, because their king was elective; 2nd, because the state was divided into about thirty independent duchies; 3rd, because it established a degrading inferiority between themselves and the native cultivators of the soil; 4th, because it never could or would enter into a fair alliance with the hierarchy of Rome, whose power was growing very fast in the opinion of the Italians or Romans, both of the Longobard and other territories of Italy. The popes were the protectors and the hope of the degraded Roman population, and this contributes to explain the facility with which Charlemagne in one single battle overthrew the whole kingdom.
LONGUS is the name of the author, or supposed author, of a Greek pastoral romance, 'The Loves of Daphnis and Chloe,' or, according to the literal version of the Greek title (Hapupoi ou ev xaiy dias), Pastoral Manner of Daphnis and Chloe,' which has been generally admired for its elegance and simplicity, and is one of the earliest specimens of that kind of composition. We know nothing of the author, who is supposed to have lived in the fourth century B.C., or of our other pseudo-longus. Veauvion, with numerous notes by the editor, Paris, 1778; Schafers, Leipzig, 1803; that of Courier, Rome, 1810; that of Passow, Leipzig, 1811, Greek and German; and by Sinner, Paris, 1829. Courier discovered in the MSS. of Longus, in the Laurentian library at Florence, a passage of our author, belonging to the book, which is wanting in all the other MSS. He first published the fragment separately at his own expense and distributed the copies gratis. He afterwards embodied it in his edition of the whole pastoral, of which he published an appended volume, of which he published another, which contains the translations of scholars of various countries. He also republished Amys's French translation of Longus, adding to it the translation of the discovered passage. [COURIER, PAUL LEON.]

LONGWY. [Moselle.]
LOENS-LE-SAUNIER. [Jura.]
LOO-CHOO ISLANDS. [Lizzou-Kirou Islands.]
LOOE, EAST AND WEST. [Cornwall.]

LOON (Ornithology. one of the English names for the Greatest Speckled Diver, Columb us glacialis. [Diver. vol. ix., p. 37.]

LOP, Lake. [Turkistan.]
LOPE DE VEGA. [Vega.]

LOORIS is the name of any of the fishes of the order Acanthopterygi. The fishes of this family (which forms the 'Pectorales Pictilces' of Cuvier) are distinguished by the bones of the carpus being elongated and forming a kind of arm, which supports the pectoral fins. The skeleton is semicircular or oval, of an elongated shape. The forelimb is wide, belonging to the body.

The Angler, or Fishing Frog, as it is sometimes called, is thus described by Mr. Yarrell:—The head is wide, depressed; the mouth nearly as wide as the head; lower jaw the longest, bearded or fringed all round the edge; both jaws armed with numerous teeth of different lengths, conical, broadening inwards also on the cutting edges of the teeth and tongue; three elongated unconnected filaments on the upper part of the head, near the upper lip, one at the nape, all three situated on the middle line; eyes large, round, brown, pupil black; pectoral fins broad and rounded on the back. or blade; mouth long and narrow in part supported by the six branchiostegous rays. Body narrow compared with the breadth of the head, and tapering gradually to the tail; vent about the middle of the body; the stomach covered with a layer of fine, branched, thin membranes:—dorsal, 3 spines and 12 soft; pectoral, 9; ventral, 5; anal, 8; caudal, 8. Colour. The upper surface of the body uniformly brown; fin membranes darker; under surface of the body, ventral and pectoral fins, white; tail dark brown, almost black.

The Angler is usually about three feet in length, but has been known to measure five. It lives at the bottom of the water, crowding close to the ground; and, by means of its ventral and pectoral fins, it stirs up the mud and sand in such a manner as to conceal itself from other fishes. The long filament at the tip of the nose is elevated, and the external appendage, which is armed with a number of spines, is used to attract smaller fishes as a bait; and when they are sufficiently near, they are seized by this voracious fish.

In the genus Antennarius there is the same sort of free ray, the head, the first of which is short or elongated, and is used as an appendage; the following rays, augmented by a membrane, are sometimes much enlarged, and at others are united to form a fin. The dorsal fin occupies nearly the whole extent of the back; the body is often beset with conical, or slender, spines. Some species of Antennarius, says Cuvier, by filling their enormous stomachs with air, expand themselves like a balloon; their fins enable them to creep on land, where they can live for two or three days, the pectorals, from their position, performing the functions of hind feet. These fishes inhabit the seas but some of the present family (Parachrus) is distinguished by the following characters:—Head horizontally flattened, broader than the body; the mouth deeply eft; operculum and suboperculum spinous; the ventral fins narrow, inserted under the throat, and extending more than two-thirds of the body's length, and elongated. The anterior dorsal fin is short, and supported by three spinous rays; the posterior dorsal is long, and supported by soft rays: the anal fin, which is opposed to the last, is Armed with seven or eight soft rays, and furnished with filaments. The species of this genus keep themselves hidden in the sand to surprise their prey, like those of the genus Lophius, and the wounds inflicted by their spines are said to be dangerous.

Lophiodon, an extinct genus of mammiferous quadrupeds nearly approaching in the structure of the teeth to the Tapirs and Rhinoceroses, and in some respects to the Hippopotamus, separated by Cuvier from Palæotherium, (with which, as well as Anoplotherium, it is closely related) in the above article. Mr. Blainville named the genus Taperochrome. Lophiodon differs from Palæotherium in that the lower molar teeth, instead of exhibiting a continuous series of double crescents running longitudinally, have transverse elevations (teeth of the same kind) on each side, which are the first and last points in which they resemble the Tapirs.

2. A third elevation (colline) on the last lower molar which is wanting in the Tapirs.

3. The anterior lower molars are not furnished with transversal elevations as the Tapirs, but present a longitudinal series of tubercules, or a conical and isolated one.

4. The upper molars have their transversal elevations more oblique, and in this respect approach the Rhinoceroses more than they differ by the absence of crochets on these elevations.

The dental formula of Lophiodon then will be:—

Inciars 6: Canines 1-1 Molars 7-7 = 42.

The rest of the osteology of this extinct form indicates the affinities above mentioned; but many parts of the skeleton are still unknown, and particularly these bones portions the nasal bones and those of the foot, the number of which is not ascertained.

No less than fifteen species are recorded, twelve of which are named. They belong to the first great fresh-water formation of the Eocene Period of Lyell; and if we are to judge from analogy, and the other animal remains (those of the mammals) of the same horizon, we must have lived in a temperature suitable to the existence of Crocodiles and fresh-water Testudinates (Emys and Triornys), creatures which, at present, inhabit warm climes.

The localities are Isel for three species, one of which is also found at Eppelesheim and another at Argenon and Sossins. Argenton for three other species. Bucher for two more. Montaubard for two more, of which a
principal marks of distinction in the structure of Lorn- 
hthaeus are a one-seeded inferior fruit containing a single 
ear ovule, a fruit consisting of a peculiar viscid matter ro-
sembling birdlime, and a minute corolla with the stamens 
posing the petals. There is but one species, the common 
plumbeous. Viscum album is found wild in England, 
of Loranthus occurs in the south of Europe; but in the hot 
dry parts of tropical countries the species abound, swarming 
over the branches of trees, of which they often form a con-
spicuous feature, with their long clustered grey-haired 
flowers. As in king's lute, Loranthus is adapted to any considerable degree the plant which it attacks, unless 
it exists in unusual quantity, so in India, where Loranthi 
are common, the injury sustained by vegetation is accord-
ing to the reciprocal size of the parasite and its stock. 
Mr. Griffith states that a species of 
Loranthus, named, 
as a parasite, and thus the 
case would become extinct.

Mr. Griffith has shown (Linn. Trans., xvii. 71) that in 
Loranthus and Viscum the ovules are not formed till after 
impregnation has taken place, a most curious and before 
unheard-of fact.

LORCA, a town of Spain in the province of Murcia, in 
the diocese of Carthagena, is built on the north slope of 
the Sierra de Cañiz, 40 miles west of Carthagena. It has an 
old castle, a college of church. Besides other churches and 
convents, a royal college, an episcopal palace, two hospitals, 
several "alamedas," or public walks, planted with fine trees, 
and, according to Miliano, 40,000 inhabitants. It has ma-
ny manufactories of woollen and fine cloths, thread, 
and lace. The territory of Lorca is very fertile, especially 
in corn, but part of it suffers from drought. Various means 
have been tried to supply the deficiency of water, but they 
have failed through bad management and the political con-
ditions of the country. (Miliano, Diccionario Geográ-
fico de España.)

LORD ADVOCATE OF SCOTLAND. This is the pecu-
ar appellation of the attorney-general, or senior stand-
ing counsel for the crown, learned in the law, in Scotland.
The regular senior counsel, to which cannot be carried to an 
early date than the end of the fifteen century. Pre-
vious to that time, indictments before the lord-justiciar 
of Scotland seem to have been under the charge and super-
intendence of the clerk of court, or justice-clerk, as he was 
termed (Justicia Clavus); and for prosecution before the high court of parliament, we find sometimes the chancel-
lor, sometimes the clerk register, and at other times a 
special counsel for the crown appointed.

The earliest standing "Advocate," and with whom the 
seats properly begins, was Sir John de Rose of Mount-
greenan, in the county of Ayr, an individual well known 
both in the politics and literature of his time: he is one of 
the Scottish poets commemorated by Dunbar. On the fall 
of Henryson and Lawson on the Scottish bar, the late 
Wishart of Pittarrow was made both king's advocate and 
justice-clerk; but afterwards those offices were again sepa-
rated, and when the Court of Session was erected in the 
beginning of the sixteenth century, Sir Adam Otterburn 
of Mensthum was his advocate. On that occasion, he was 
not only privileged to plead within the bar, but actually 
nominated one of the judges of the court, or a lord of ses-
ion, as the king's treasurer and justice-clerk likewise were. 
It was from this circumstance he acquired the style of Lord 
Advocate, an appellation which occurs in the years 1573 
and 1576 (Pitcairn's Criminal Trials) and was the fixed 
designation in 1587. (See the statute, 1587, c. 115.) This 
was in the time of David M'Gill of Rankielet; and before 
M'Gill had long left the office, it had the additional style 
of Right Honourable. (See Act of Sederunt, 17th Nov,
This seems to have been the last interference with the royal authority over the appointment of chancellor until the time of the Long Parliament. In the more vigorous reign of Edward III., we find by the parliament roll that in 1343 the commons prayed that no alien might be made chancellor, but the king answered, that he could appoint whom he would. But the reign of Edward II. was a period of great uncertainty, the chancellor, treasurer, keeper of the great seal, chief chamberlain, and steward of the king’s household might be appointed in that parliament. Henry V. had two great seals, one of gold, which he delivered to the bishop of Durham, and the other of silver, which he delivered to the bishop of London for the payment of public gifts. The statute of 31 Henry VIII., c. 10, assigned the same rank to the lord chancellor and the lord keeper, giving the person holding the one office or the other precedence over all lay peers except the archbishops of Canterbury and York, but it was left to 5 Elizabeth, Sir Nicolas Bacon lord keeper, to provide an act to be passed (c. 18), which, after revising that question had of late arisen whether like place, authority, pre-eminence, jurisdiction, should be enjoyed by the same person as lord keeper of the great seal of England, as belonged to the office of lord-chancellor of England, declares that the keeper of the great seal has always had, used and enjoyed the same place, authority, pre-eminence, jurisdiction, and all other honors, commodities, and advantages as the lord-chancellor.

Notwithstanding these two statutes the appointment of lord-keeper appears not to have stood so high in the estimation of the public as that of chancellor; and the great seal has always been this more esteemed.

Upon the rupture between Charles I. and his parliament the king took the great seal to Oxford, upon which a new seal was ordered to be made by the parliament. This measure was the subject of severe reproaches from the monarch; but it was persevered in, and the consent being obtained, the new seal was made and handed over to the king unconditionally to the king, it is difficult to say how another course could have been adopted.


The present mode of the lord-keeper, as identified with the chancellor, have already been stated. (Chancellor: Chancery.)

LORD-LIEUTENANT. It was formerly usual for the crown, from time to time, to issue commissions of array requiring certain experiences; and the inhabitants of the counties to which such commissions were sent. They were directed to put into military order those who were capable of performing military service, and were called upon to appear before the lord-lieutenant and other proper persons, to furnish arms to their more vigorous countrymen; and they were to erect beacons where necessary. The form of these commissions, after much complaints, was settled by statute, and in 1559, 15 and 16 Elizabeth, c. 14, was inserted by the parliament-rolls of 5 Hen. IV. 1403-4, vol. iii. p. 527.

In the 16th century these commissions of array appear to have generally given place to commissions of lieutenant, by which nearly the same powers as those of the old commissions of array were conferred on certain persons standing representatives of the crown for keeping the counties for which they were appointed in military order.

In 1545 a commission des armés et capitaines générauxcontre François issued to the duke of Norfolk, constituting him lord-lieutenant for the counties of Essex, Suffolke, Norfolk, Hertford, Cambridgeshire, Huntingdon, Lincoln, Rutland, Warwick, Northampton, and Berkshire, and for the same purpose to be military governor, and for the same purpose to be military governor in the counties of Kesteven, Rutland, Lincoln, Northampton, and Berkshire, and for the same purpose to be military governor. These officers are however spoken of by Camden, in the reign of Elizabeth, as extraordinary magistrates, constituted only in times of difficulty and danger, which was the practice with commissioners of array, as opposed to the usual royalals in their commission.

The right of the crown to issue commissions of lieutenant was denied by the Long Parliament, and this
question formed the proximate cause of the rupture between Charles I. and his subjects. Upon the Restoration the right of the crown to issue such commissions was established by a declaratory act, 14 Charles II., cap. 3.

The commoners and the lords of the lord-lieutenant and of the temporary vice-lieutenants, and of his permanent deputy-lieutenants, have latterly been fixed and regulated by the militia acts. [Militia.]

LORD OF MISRULE, the master of the revels at Christmas in any nobleman's or other great house. "First in the feast of Christmas," says Stowe (Surr. of Lond., edit. 1603, p. 98), "there was in the king's house, wheresoe'er he was lodged, a Lord of Misrule, or master of merry sports, and the like had ye in the good grace of every nobleman or good worship, where he spiritual or temporal: amongst the which the mayor of London, and either of the sheriffs, had their several Lords of Misrule, ever contending, without quarrel or offence, which should make the newest准备 to delight the beholders."

The celebration and feasting of the lords and ladies in the Christmas week, and in the month of January, was counted among the most magnificent and expensive in the kingdom. In the time of Henry III., after the battle of Evesham, 2. The removal from it of representatives of the counties, cities, and boroughs, who are supposed to have formerly sat with the lords, and the placing them in a distinct assembly, called the House of Commons. The reduction of the Lords Spiritual, by the suppression of the monastic establishments. 4. The introduction of the Scottish representative peers. And 5. The introduction of the Irish bishops and the Irish representative peers; the last being one of the very beginning of anything like an English constitution. It is in fact the magnum concilium of the early chronicles. The bishops are sometimes said to sit in virtue of baronies annexed to their respective offices, but it is not certain whether such is the case, and it may be supposed that the bishoprics of the new creation stand on the same footing as their predecessors in the reign of King Henry VIII.; and at best it is but a legal fiction, being evident from the whole course of history that the bishops formed, as such, a constituent part of such assemblies in the Saxon times, and were, as such, among the chief advisers of the sovereign. One of the last acts of King Charles I., before he finally left London and disconnected himself from the Parliament, was to give the royal assent to a bill for removing the bishops from Parliament. The question has been raised whether the Lords Spiritual and the Lords Temporal, though sitting together, form two distinct estates of the realm, the concurrence of both is not requisite in any determination of this house, just as the consent of the two houses of Parliament is necessary to the determination of the acts of Parliament. It has now stood that the Lords Spiritual and Lords Temporal are but one body, whose joint will is to be collected by the gross majority of voices; and statutes have been made in the absence of all the Spiritual Lords.

The House of Lords has two distinct functions: the legislative and the judicial.

In its legislative character, every new law, and every change in the existing law, must have the consent of this majority of the house, as well as of a majority of the House of Commons.

In its judicial character it is a court for the trial: 1. Of criminal cases on impeachment by the House of Commons; 2. Of peers on indictment found by a grand jury; 3. For the hearing and determining of appeals from the Court of Clarendon; 4. For the hearing and determining of appeals on writs of error to reverse judgments in the Court of King's Bench; and 5. In hearing and determining appeals from the supreme courts in Ireland and Scotland. The house has the power to require the attendance of the judges to assist it in the discharge of its duties.

A few points in which the House of Lords differs from the lower house of Parliament remain to be noticed. In the chair of the house sits the lord high commissioner of England. In the house of the commons and the Lords, the Commons are summoned to attend him there to receive the communication...
of his will and pleasure. The royal assent to bills, whether given by the king or queen in person, or by a commission appointed by the king or queen, is given in the House of Lords. All bills affecting in any way the rights and duties of the people, may be introduced in that house. The members of the House of Lords have a right of voting on any measure before the house by proxy, the proxy being a member of the house: and, lastly, they have the privilege of entering on the journals of the house their dissent from any measure that has been received the sanction of the majority, with the reasons for that dissent. This is called their protest.

LORDSHIP. [LXXVII.]

LORETO, a town of the Papal state in the province of Macerata, near the coast of the Adriatic, 15 miles south by east of Ancona, is dedicated for the Virgin Mary, which is called 'La Santa Casa' (the holy house). It is an oblong quadrilateral building, the walls of which are of brick covered with cement, 40 feet long, about 20 wide, and 25 feet high. It contains only one room, with a door, a chimney, and a window. In a niche of the temple is a statue of the Virgin made of cedar wood. The legend says that this was the dwelling of Mary at Nazareth, which it was often visited by the Christian pilgrims; that in the year 1295, the Virgin, in order to prevent the Saracen, the last hold of the Christians in Palestine, the house was lifted up by supernatural power to Dalmatia, where it rested on a hill near the sea-coast, between Terracina and Fiume, of which district Nicolo Francipani was the governor, and goes on to say that after remaining some time in Dalmatia, and being the object of public wonder and veneration, it was again removed by invisible hands, in December, 1294, and carried across the Adriatic to a hill near Ravenna, on ground belonging to a woman of the name of Aretta, a diminutive of Lorya, from whose name the name of Loreto is derived. Further particulars concerning this tradition are given in the Teatro Istorico della Santa Casa Nazarena della B Vergine Maria e sua miracolosa Rivelazione in Loreto, by Martorelli, bishop of Montefeltro, 2 vols., Rome, 1736, dedicated to Pope Clement XII. This legend has furnished Tasso with the subject of one of his finest lyrics, beginning with 'Ecco fra le tempestosi e fieri venti.' A splendid church was afterwards built to the holy house, and embellished and enriched by successive popes, among others by Leo X., Clement VII., and Sixtus V. The town of Loreto, which is small but well built, and contains 6000 inhabitants, has grown round the sanctuary, which is annually visited by numerous pilgrims. In 1536 a small papal bull was drawn up in a MS. in the chapel of the church, when the French took Loreto, they found little to grieve. The church and treasury have been again enriched since the Restoration by votive offerings of devotées. (Valky, Fossaces in Italia.)

LORENZO DE' MEDICI. [MEDICI.]

LORICA'RIA. [CELLARIA, vol. vii., p. 405.] The term Lorica'tia is also employed by Lamouroux to designate a genus of Malacopneurous Fishes.

LORICA'RIA, a subdivision of the Linnean genus Celia'tia, proposed by Lamouroux. [CELLARIA.]

LORICA'TA, the name applied by Merrem and Fitzinger to the Crocodiles, Emysbourians of De Blainville. [Crocodile, vol. viii., p. 162.]

LORIN is a part of the French nation, at the confluence of the Rivers Seine and the Vair, which is divided between Upper and Lower Lorin, or between Northern and Southern Lorin, a thousand miles in length, and lies between 55° 16' and 55° 54' N., and between 4° 30' and 5° 37' W., comprising the parishes of Anp, Andelot, Anselme, Gironcourt, L'Isle-aux-Moines, Kilmar, Kilmore, Kilmin, Lassore (island), and Mackern. At the above boundary, which differs considerably from that given by several topographers (some of whom make Lorraine the boundaries), is taken from Lang and the others in the Population Restored. LORRAINE, a province or military government of France before the Revolution, situated on the north-western frontier. It was bounded on the north by the Vire, on the west by the Seine, on the south by the Marne, and on the east by the duchy of Deux Ponts, in the Palatinate; on
east by Alsace, from which it was separated by the Voges; on the south by Franche Comté; on the south-west by the county of Langres in the department of the Saône; and by other districts of Champagne. The length of the province was about 115 miles from north to south; its breadth from east to west 130 miles in the northern and about 70 miles in the southern part. It was about 6730 square miles. It was watered in the west by some of the feeder's of the Aisne and Marne, belonging to the system of the Seine, and by the Meuse; on the east by the Moselle and its tributaries.

Lorraine, in the extended application of the name, comprehended with the bounds and dimensions given above, comprehended the following divisions:

1. The Duchy of Lorraine, containing:
   - 1. La Lorraine Propre, with Carcassonne, Mirepoix, Nicaise, (a.d. 1396).
   - 2. La Barrois Mouvant.
   - 3. La Barrois non Mouvant.

2. The Duchy of Bar or La Barre, containing:
   - 1. La Pays des Voges.
   - 2. La Retournede.
   - 3. La Verdenois.

3. The three Bishoprics, containing:
   - 1. La Barrois Moutant.
   - 2. La Barrois non Moutant.
   - 3. La Pays Messein.

4. The Duchy of Metz.

A small portion of La Lorraine Allemande was ceded by France to Prussia by the treaty of Vienna, 1815, and has been incorporated in the Rhenish Provinces of that kingdom. The remainder consists of the departments of Meurthe, Moselle, and Vosges.

At the time of the Roman Conquest of Gaul under Caesar, Lorraine was inhabited by the Treveri, or Treviri, the Mediolanum, the Verdonumenses, and the Lucii, all Belgic tribes, whose country was divided among the tribes of the Saône, the Rhône, and the Meuse, with other parts of France, by the Meuse, the Saône, and the Rhône. These tribes have subsequently formed provinces in France.

The division of the Frankish empire under the sons of Clovis, Lorraine formed part of the kingdom of Austrasia. In this kingdom the power of the Franks was greater and the military habits of the people were more firmly retained than in other parts of France. It was in this part of France that the Carolingian family first rose to power under Pepin the Short and Charles Martel.

In the division of the empire of Charles Martel between the children of his son and successor, Dagobert, the province of Lorraine was assigned to his son Charles, who became the Emperor Charles the Great, and afterwards Charles the Bald, who became King of France. The region of Lorraine was divided into the counties of the Aisne, of the Moselle, and of the Meuse, with other parts of France, by the Meuse, the Saône, and the Rhône.

The duchy of Lorraine consisted of a large part of the kingdom of Lorraine. It was established in the tenth century, and retained its independence until the eleventh century. In the wars of the eleventh century between the counts of Bar, the dukes of Brabant, and the Emperor Frederick I., the duchy of Lorraine was divided among the counts of Bar, the dukes of Brabant, and the Emperor. It was afterwards united to the commune of the Emperor, and by the Treaty of the Pyrenees, in 1659, restored to the duchy of Lorraine.

The duchy of Lorraine was in the eleventh century a kingdom of the empire of the Franks. It was conquered by the Emperor Frederick I., who retained it for a short time, and afterwards gave it to the duchy of Lorraine. The duchy of Lorraine was separated from the duchy of Lorraine in the eleventh century. In the following centuries the duchy was continually engaged in hostilities, either as vassals of the emperor of Germany (who were possessors of the ancient kingdom of Lorraine), or on their own account with other potentates, or with the more powerful of their subjects.

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LOT

The Garonne is a department of France, bounded on the north by that of Dordogne; on the north-east by that of Lot; on the south-east by that of Tarn et Garonne; on the north-west by the territory of the Cadurci, from which its capital Cahors, originally Divona, derived its name. 'Usellolodium, the last place in Gaul which held out against Caesar, was probably a hill north of Puycoulou, on the Tornone, a tributary of the Garonne in this department. Another town, Varadetum, mentioned in the Peutinger Table, was probably at or near Varasi, a village south of the Lot. Before the Revolution the country included in this department constituted the greater part of Quercy or Quercy, a province of Guienne.

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LOT

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The number of cantons, or districts, each under a justice of the peace, is thirty-five.

In the arrondissement of Agen are: Agen, Aiguillon, Port-Sainte-Marie, and Clermont on the Garonne; Gramons on the Lot; Puymirat and Sainte-Croix near the Gers; Sainte-Viile and La Saulvetat de Sauveterre on the Sou, a feeder of that river; Astaffort and Larcang on the Gers; La Roque-Timbaut, Castelard and Prayssac in the country north of the Garonne; and La Plume, Moirax, Cadecouste, and Cuq, in the country south of the Gers.

Agen is on the right bank of the Garonne. It is mentioned by Ptolomy, who makes it the capital of the Nitobrages, a Celtic tribe: it is mentioned also in the Itinerary of Antoninus, in Ausonius, in the Notitia Imperii, and in the Notitia Galliarum, divided from the Roman Province of Aquitania. A few towns suffered more severely in the irruption of the barbarous tribes that overthrew the Roman Empire, or in the troubled ages which followed. It was pillaged by Goths, Vandals, Alans, Suevi, and Burgundians; and at a later time by Saracens and Normans. It was afterwards at different periods subject to the dukes of Aquitaine, the kings of France and England, and the counts of Toulouse; and in the religious wars of the sixteenth century it suffered severely from the invasion of the two Armagnacs. The town itself is ill built; the squares or open spaces are irregular, the streets narrow, crooked, and dirty; the houses are neither handsome nor convenient. The bridge over the Garonne is tolerably handsome; and the public walks, especially the one from the Bastide on the river, divided from the town square by open fields, is very agreeable.

The public buildings most worthy of notice are the Church of St. Caprais, the Prefect's Office, and the Hospital of St. Jacques. The population in 1831 was 11,991 for the whole commune; or, 12,631 for the whole commune; in 1836 it was 13,009 for the whole commune; and 13,758 for the whole commune.

There are four yearly fairs. There is a public library of 9,000 volumes; a society of arts, sciences, and agriculture; a municipal library, a theatre, and a hospital. Among the eminent natives of Agen are: Salpicon Severus, one of the Christian fathers, Joseph Scaliger, and La Pérouse.

The arrondissement of Agen is on the left bank of the Garonne. The city is also the seat of a Court of Appeal, which has jurisdiction over the arrondissements of Gers, Lot, and Lot-et-Garonne.

The population in 1831 was 45,086 for the whole commune; which is a very fertile valley at the confluence of the Lot and the Garonne. A noble château was commenced here in 1790 by the Duke of Aiguillon and never finished. It is also (or were, in the present century) the seat of the Bishop of Bordeaux; but it has since been converted into an almshouse, for the inhabitants of the parishes of the environs of the town.

There are paper-mills and manufacture; and a considerable amount of paper and paper-making. There are a number of paper-mills; and the production of paper and paper-mills is considerable. There are also cotton and woolen mills, and iron-works.

The number of iron furnaces for producing pig-iron is five; charcoal is the principal fuel used: there are twelve forges for the preparation of wrought-iron.

The chief article of commerce is iron, with some paper, paper-mills, and some manufactures of leather and other articles are carried on.

The population of the above places, when not otherwise specified, is that of the whole commune, from the census of 1831.
The department for the most part formed part of the territory of the Nitribidges, but it includes probably small portions of the country of the Petrocorii and Vasates. Aquinum (Aigue) and Excusum (Excis) on the side of Alfred's Oak, to the north of the Nitribidges. In the Roman division of Gaul, the department was comprehended in Novempopulana, a subdi

From the Lammermuir ranges of which the remainder belongs to Berwickshire. These hills constitute within East Lothian a continuous chain, beginning at the Lammerlaw (about 2000 ft. long), and running north-west to the Sea. The course thence to St. Abb's Head is nearly east. The highest summits of this chain are Lammerlaw, about 1700 feet, and Sayers Law, 1738. Towards the north the ridge terminates rather abruptly; but towards the south a more nearly precipitate slope, but in winter forms a very considerable torrent. The beds of the rivers are wide, and formed by the debris of the mountains through which they flow. The valleys are rather narrow and of moderate fertility, but they are under cultivation. The hills are mostly covered with a little grass, the aspect of improvement. This elevated district is sometimes covered with snow for three months.

From the Lammerlaw a series of hills extends south-westward to Gala Hill. They are connected by high ground and capes, and are lcmmonly called the Souther Hills, from one of the highest summits. They attain an elevation of near 1000 feet. West of them the watershed between the Gala Water, a tributary of the Tweed, and the Tyne, which rises in the hills, is formed by a table-land of an area of 1750 acres, but there are two distinct ridges. The one is on both sides of the Gore Water, a tributary of the Esk, and is called Borthwick Muir. Its elevation above the sea is between 500 and 600 feet, and its surface is chiefly covered with 산 and rivulet, and its watercourses run in a deep valley of very moderate fertility. In this muir, north-west of Borthwick, rise the Failside and Carberry Hills which run northward between Crichton and Cranston on the east, and Cockpen and Dalkeith on the west, and terminate two miles south-east of Inveresk. Their elevation varies from 500 to 700 feet.

The country between the Souther Hills, Borthwick Muir, and the Carberry ridge partakes much of the character of the muir, but the elevations are higher, being on an average about 500 feet, and one or two point to a height of 600 feet above the sea, though it lowers considerably further north. Most of this tract is covered with heath, but other portions are green, though they are intersected with bogs. Along the rivers there are small tracts of good land.

The northern boundary of this district is about 6 miles, and is rather undulating than hilly; its elevations have gentle slopes, and rise hardly more than 100 feet above their base, which varies in height above the sea from about 600 feet near the hills to 250 feet towards the Tyne. The highest point is near Preston, 800 feet. The Gore Water runs in a deep valley, and is joined by the smaller streams, which rise near Preston, on the east at Broxmouth, east of Dunbar, and falls in a low ridge of elevated ground which runs westward near Spott, Prestonpans, and Saltoun, whence it passes to Saltoun.

From this line the country slopes gradually towards the river Tyne, without forming any hills, except the Tamfour Hill, in the parish of Preston-kirk, which rises abruptly on all sides, and on the south is nearly perpendicular. The elevation between the hills and the Tyne is on one mile, and on the other, four miles, and as on the other side of this valley, there are Skirrids and Salmond, which rise steeply above the sea; and Down Hill near Scott (500 feet). This tract does not contain much moorland; and though many parts near the Lammermuir have a sandy and rather sterile surface, the remainder is tolerably fertile, and produces good crops. The northern boundary of this tract is marked by the river Tyne, and where the course of the river is so narrow, the heights are much less, and are connected with the hills by low banks of sand and soil.

The Tyne originates in two branches in the Carberry Hills and on Borthwick Muir. The northern branch, called the Tyne, unites with the southern, called the Salmond Water, near Saltoun House: at the junction the latter is the more considerable river. From Saltoun House the river runs up as far as the present line of the new road, and has a course of about 5 miles, winding and meandering, and is intersected by a number of Brooks. At Linton it traverses a ridge of rocks which formerly caused a waterfall about two feet high, but the rock has been lately cleared away. The tide ascends the river two miles from its mouth. The whole course of the Tyne is about 50 miles.

From the Hills of Failside, south-east of Inveresk, run
high ground runs in a north-east direction, being nearly equally distant from the churches of Tranent and Pencaitland. Further east the churches of Gladsmuir and Adastral stand on its highest elevation, and between these and the Garleton Hills we have the most elevated part of these high lands. From Adelstoun they extend eastward to the village of Linton, where they terminate with a very gradual descent. The soil on these high lands is of inferior quality, but the gentle declivities, with which they sink towards the sea and the river Tyne, it is characterized by fertility, especially on the southern slope, which terminates near the Tyne in rich meadows.

The northern slope of this ridge terminates east of the engineer's road, and the lower lands along the Coquet are partly covered by the drift of New Berwick is the New Berwick Hills, which is 800 feet high. The more elevated portion of this region is not cultivated, but the lower grounds produce moderate crops of grain. Some large tracts near the sea shore are low, and most of them are drained and converted into meadows and fields of considerable value.

The tract of land north of the valley of the Peffer is chiefly occupied by some high ground running nearly west and east, near which the Ormiston Water, or the southernmost deep branch of the Hope Water, leaves the higher lands, and traverses East Lothian from Aberlady Bay towards Pfeiffer Sands on the east. The rivulet which traverses it, the Peffer, rises in a swampy meadow eastward of Congleton, and immediately divides into two branches, of which one runs south-east to Bamborough, and the other runs slowly to Aberlady Bay. The former runs about five and the latter about eight miles. Their common source is said to be 25 or 30 feet above the sea. The valley, which is from one to two miles wide, was formerly a deep watercourse, and is now mainly used as a drainage channel for Aberlady.
L O T

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coal-formation begins, which extends through the whole of the southern districts of Mid and West Lothian. The great coal-field lies to the east and south of Edinburgh, where it extends about 25 miles in length, its greatest breadth being six miles. It is calculated to cover an area of 80 square miles. Through the coal-formation continues farther to the westward, it is intersected by extensive tracts of limestone and sandstone, in which only small seams of coal occur. But in the hills near Bathgate the coal-formation again predominates, and beds of coal occur there which are of proportionable thickness. The country between the coal-formation and the Frith of Forth belongs to the red sandstone, consisting mostly of limestone and sandstone, through which at several places trap and basalt rocks protrude. Lothian, under the names of Lanark, Linlithgow, and Lothian, antiently comprehended all the country lying between the rivers Tweed and Forth as far west as the river Avon, which separates the counties of Linlithgow and Stirling. It consequently included the whole of Berwickshire and part of the counties of Roxburgh, Selkirk, and Peebles, in addition to the three counties of Haddington, Edinburgh, and Linlithgow, which three alone constitute the district now known under the appellation of the Lothians. The fertile district was inhabited by the Britons until their expulsion by the Saxons about the middle of the fifth century. Soon after the union of the Picts and Scots

(A.D. 843) Kenneth Macalpine made incursions into Sax- 

onia, as Lothian was then called, but did not succeed in 

obtaining any permanent possession. It subsequently be- 

came included in the bishopric of Durham, and in the year 

twelfth century, during the reign of Northumber- 

land, but Lothian continued to be known as a county distinct from Scotland even as late as the reign of David I. 

(A.D. 1124). The eastern boundary appears to have been 

restricted to the Lammermuir hills about the middle of the 

twelfth century, during the reign of William the Lion, and 

to have been then also first divided into East 

Lothian (HADDINGTONSHIRE), West Lothian (LINLITHGOW- 

shire), and Mid-Lothian (EDINBURGHSHIRE).

With reference to Edinburghshire, the following table 

shows the number of the parish schools of that county at 

the end of the year 1825, has been compiled from the Return 

made by the parish clerks to Parliament in 1826. 1. 

the parishes of Canongate, College Church, High Church, 

Lady Yester, New Grey Friers. New North Church, Old 

Church, Old Grey Friers, St. Andrew, St. Cutberht, St. 

George, Mary, Walkinpark, and Tron Church, there 

are no parochial schools, but in these, as in most of 

the other parishes, there are schools established on what 

are called the legal provision, besides private schools, and 

a number of scholars attending them is very considerable. 

(Camden's Brit.; Chalmers's Caledonia; Old and New 

Statistical Account of Scotland, &c.)

<table>
<thead>
<tr>
<th>Parish</th>
<th>Salary and Emoluments of Schoolmaster in 1825</th>
<th>Subjects taught, and School-fee per quarter</th>
<th>Average No. of scholars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwick</td>
<td>Salary 20 0, fees 30 0</td>
<td>English reading, writing, and arithmetic 3a. 6d.</td>
<td>30</td>
</tr>
<tr>
<td>Mid Calder</td>
<td>37 0 0, fees 50 0</td>
<td>Latin 6a.</td>
<td>40</td>
</tr>
<tr>
<td>West Calder</td>
<td>300 marks Sodoch, fees 250 0</td>
<td>English, writing, and accounts, Latin, Greek, and French</td>
<td>50</td>
</tr>
<tr>
<td>Carrington</td>
<td>21 0 0, fees 60 0</td>
<td>English 2a., writing 2a. 6d., arithmetic 3a. 6d.</td>
<td>50</td>
</tr>
<tr>
<td>Carluke</td>
<td>22 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Greek 6a.</td>
<td>50</td>
</tr>
<tr>
<td>Colinton</td>
<td>22 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
</tr>
<tr>
<td>Grameend</td>
<td>22 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
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<tr>
<td>Crawfold</td>
<td>22 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
</tr>
<tr>
<td>Crichton</td>
<td>19 12 0, fees 40 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
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<tr>
<td>Dunsledomen</td>
<td>20 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
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<tr>
<td>Fauls and Southam</td>
<td>19 0 0, fees 40 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
</tr>
<tr>
<td>Glencairn</td>
<td>21 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
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<tr>
<td>Heriot</td>
<td>21 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
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<tr>
<td>Inversnaich (Grammar-school)</td>
<td>21 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
</tr>
<tr>
<td>Linlithgow (Parochial)</td>
<td>19 12 0, fees 40 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
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<tr>
<td>North Leith</td>
<td>20 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
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<tr>
<td>Tobermory</td>
<td>21 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
</tr>
<tr>
<td>Temple</td>
<td>20 0 0, fees 60 0</td>
<td>English, writing, and accounts 3a. 6d., Latin 6a.</td>
<td>50</td>
</tr>
</tbody>
</table>

LORTIONS, or washes, termed also epilithons, and when 
i ndented for the eye, collyria, or eye-washes, are either mix-
tures of different ingredients, or solutions of various med-
ical substances, in water or other menstrum, designed for 
external application. If the object be to reduce the tem-
perature of a part, they are generally formed of spirituous 
or other volatile principles, which by their evaporation 
cool such and must be applied by means of a very thin 
layer of linen), or of saline bodies, which at the moment of 
their solution cause a reduced temperature, and 
which should be applied immediately after being mixed, 
and frequently renewed. Others are composed of stimulating 
substances, and are intended to impart power for 
that purpose might a great proportion 

of tumours or ulcers, while a different set are designed to 
allay pain, and are composed of sedative or narcotic 
principles. Many of the nostrums sold under the name of lotions 
are solutions of very active ingredients and their application 
are often productive of very serious effects.

LOTTERIES are schemes by which some modern go-

gvernments have raised a revenue from their subjects, by 
taking advantage of that feeling of confidence in their own 
good fortune which is entertained by a large proportion of 
mankind. The plan upon which lotteries have generally 
been conducted is that of selling for more than their intrin-
sic worth a certain number of tickets or chances, and dis-
tributing by lot a part only of the money thus collected, 
among a comparatively small number of the purchasers. 
Lotteries may thus be considered as games of chance, 
the aggregate number of players in which are sure to lose 
a part of their venture. During the period in which the 
English state lotteries were carried on by act of parliament, 
it was found that the amount required in different moneys 
was equal to 10d. for each ticket or chance 
that was issued, and the profit to the state consisted of the 
sum beyond that rate which contractors were willing to 
give for the privilege of selling to the public the tickets or shares 
of those tickets, with a view that purpose might divide the 
half, quarters, eights, and sixteenths of tickets. The 
price paid by the contractors for this privilege varied 
with circumstances, but was usually about six or seven pounds 
per ticket beyond the amount required in different moneys. The 
price charged by the contractors to the public was generally 
from four or five pounds per ticket beyond that paid to the 
government, and more than this rate of advance was always 
required when the tickets were divided into shares, to which 
shares being charged more in proportion than the tickets. 

The invention of lotteries is ascribed to the Romans.
but supposed it book. to little 1780, no in said springing of national aquatica was still have been employed for the repair of certain harbours. In the course of the following century the spirit of gambling appears to have waned, this direction in lottery tickets were early, in the reign of Queen Anne, suppressed as 'public nuisances.' In the early period of the history of the National Debt of England, it was usual to pay the prizes in the state lotteries in the form of terminable annuities, but this has now been changed by the substitution of lottery tickets at 10l. per ticket, the prizes in which were funded at the rate of 14 per cent. for sixteen years certain. In 1746 a loan of three million was raised on 4 per cent. annuities, and a lottery of 50,000 tickets at 10l. each; and in the following year one million was raised by the sale of 100,000 tickets, the prizes in which were funded in perpetual annuities at the rate of 4 per cent. per annum. Probably the last occasion on which the taste for gambling was thus made use of occurred in 1780, when every subscriber of 100l. was entitled to an annual subscription of twelve millions at 4 per cent. received a bonus of four lottery tickets, the intrinsic value of which of each was 10l.

In 1778 an act was passed obliging every person who kept a lottery booth to a yearly licence, and to pay 50l. for the same, a measure which reduced the number of lottery-offices from 400 to 51.

The immorality on the part of the government, in thus encouraging a spirit of gambling among the generality of the people, was one of those which are usually followed by subdivision of chances to the sixteenth of a ticket as the minimum, it was intended to prevent the labouring population from risking their earnings, but this limitation was excessively and easily evaded by means which aggravated the evil, the keepers of these illegal offices (commonly known as 'little goes') and insurance offices requiring extra profits to cover the chances of detection and punishment. All the efforts of the police were ineffectual for the suppression of these illegal proceedings, and for many years the lotteries were managed in the same manner as in the Hanoverian system, in which the first act passed in Hanover 1782 provided that all tickets or shares of tickets in any foreign lottery, which latter provision is, to this day, extensively evaded.

The system of state lotteries was very long carried on by the French government, and was the cause of still greater demoralization than in England. Recently, state lotteries have also been abolished in France.

The Hamburg lottery, which is still continued, is established on the model of the American Congress of 1776 or England. The whole money for which the tickets are sold is distributed among the buyers, except a deduction of 10 per cent, which is made from the amount of the prizes at the time of their payment.

Lotteries have been very common in the United States, and have been sanctioned by the several states, not so much as a means of raising money for state purposes, as with the view of encouraging, as they supposed, many useful objects which could only be effected by raising at once a large sum of money, and almost during the latter part of the year 1801, an excellent book on the subject of lotteries was published by Mr. Thomas Jefferson, American lawyer, who figured in the New York State Convention about twenty years ago, declared that though 'he was no friend to lotteries, he could not admit they were per se criminal or unlawful.' It is true, when examined, it was in the manner in which they were managed. In England, if not in France, there were lotteries annually instituted by government, and it was considered a fair way to reach the pockets of misers and persons disposed to dissipate their funds. The American Congress of 1776 sanctioned a national lottery, and perhaps no body of men ever surpassed them in intelligence and virtue.' These remarks are merely quoted in order to show what a man of high character in America for integrity and knowledge thought of lotteries twenty years ago. The opinions which were then expressed were at that time, we can venture to say, shared by a great number of people. We are sure to have been the think that juster views are now prevailing as to the subject of lotteries: but we have no recent information on the subject.

LOTUS of the Antients. The plant or plants referred to by classical authors under the name of Lotus is a subject which has engaged the attention of numerous commentators as well as of botanists. To the difficulty of ascertaining the identity of a plant but imperfectly described has in this instance been added the want of it having been applied to several very distinct plants. Fée, the latest author (Cul de Virgile), enumerates no less than eleven to which the name Lotus was applied: it is unnecessary here to enumerate more than the most remarkable. Of these, some are herbaceous, others perennial. Among the former are the Lotus nativa and sylvestris of Dioscorides: the first, he states, is also called trifolium; it is supposed by some botanists to be Melilotus officinalis, and by others to be M. cercuia. Dr. Sibthorp has fixed upon Melilotus mediterraneus as the plant of Dioscorides.

The Lotus sylvestris of Dioscorides, called also libyon, a native of Libya, and about two feet high, with leaves like those of Lotus trifolium, and fruit like that of Fenugreek, is thought to be the Trigonella clatio of Sibthorp, which is found in Asia Minor, and is described by the Arabs under the name of handachochar, or handhookee, with garph and thusf as other Arabic names. From the great number of similar plants of the tribe of Lotus, none of which are described with the same care as medicines, it is impossible, without specimens, to identify either of the above, but they are probably allied to the Melilotus.

Lotus egyp[tia, or the Egyptian Lotus, is no doubt one of the Nymphaeaceae, and as described by Dioscorides under the name of Egypt; in fields inundated by the river, with a stem like that of the cyamus, or Egyptian bean (Nelumbium spectosum), and a white liliaceous flower, which rises out of the water at sun-rise, and sinks down again at its setting, a capsule like that of other Cyamus, which are common to both the Egyptians and orientals and make in bread, with a root which is likewise eaten, both in a dressed and undressed state. The plant is no doubt the Nymphaea Lotus of botanists. But as in the most antient monuments a blue-coloured lotus is represented, it is supposed the plants which were also acquainted with the Nymphaea cercuia. At the present day, the seeds of several Nymphaeas roasted in sand are eaten by the natives of India, as are likewise the stalks of the rootstock, which is also used in the same manner with the Egyptian species. As the flowers of the Nymphœas are so highly esteemed by the Hindus, and notices respecting them constantly occur in their poetry and mythology, it is possible that an Eastern legend may have given origin to the mention of the nympha lotis, flying in the air, into the aquea lotis.' (Ovid, Metamorph., ix. 341.)

The Egyptian lotus however is not so celebrated as another less known tree, to which exaggerated description has assigned a fruit of the most delicious kind, upon which the Lophotèpi lived, and which, when strangers had once tasted, they ceased to wish to return to their native country. This is specially described as a tree, but there is no doubt that several have been confounded under it. Pliny describes it under the name of the nymph of Pliny as a native of Italy of great size, forming excellent wood, with fruit about the size of pepper and as resembling that of the cherry. This description applies very closely to the Celta Australia, or European lotis a native of Italy, which is one of the largest timber-trees of the South of Europe, with wood of considerable hardness and toughness. It produces berries about the size of small cherries and with long stalks like them, eaten both by birds and children.

This however far short of the character of the lotus of the Lophotèpi, of which the best description, according to Sprengel, is that of Polybius, who states that it was a moderate-sized thorny tree, with leaves like those of Rhamnus, but broader; that the fruit was at first like the white of myrtle, but become as large as an olive, of a reddish colour, and containing a small nut, taste sweetish,
resembling that of figs or dates; and that a wine was prepared from it. That this tree was a native of Africa we know from the Loughare, who employed it as their chief food, being a people of the African coast near the Syrtes. (Herod., iv. 177.) Arabian authors, in their translation of the works of the Greeks, give the synonyms in both languages, and we have, in the chapter of berapion, translated into Latin, 'De loto arbre,' the name sidr or sidr, given as the Arabic name of the tree, and nabadch, nilouk, or nabkh, as that of its fruit. This name has been long known as that of a species of Zizyphus, and has been applied by botanists to one species, Z. Napus, and also to the Travels in Barbary, figs, a species of Zizyphus, which he calls 'Sycia Arabian, quae et Lotus veteranum.' It is a prickly branching shrub, with fruit of the size of a wild plum, and of a sweetish taste and astringent colour. It is said to be pleasant to the palate, and even to draw blood from the veins. Desfontaines also found this Zizyphus Lotus on the same coast, and has fully described it. Mungo Park found a species of Zizyphus in the interior of Africa, which forms a large tree with yellow farinaceous berries of a delicate taste. The natives, he says, eat them and drink them into a sour bread, by exposing them some days to the sun, and afterwards pounding them gently in a mortar, until the farinaceous part is separated from the stone. This meal is then mixed with a little water, and formed into cakes, which, when dry, supply the inhabitants with the last anything they can eat. It may be added, that the fruit of several species of Zizyphus is eaten in India. One kind, commonly known by the name ber, forms a moderate-sized tree in a cultivated state, with oval fruit of a yellowish or reddish colour, and about the size of the American plum, with a taste much esteemed. The taste is mild and sweet, with a slight degree of acidity, probably coming nearer to the taste of dates than any other fruit. In Persian works, berree and barree are given as its Hindustanee, hamor and khali as its Arabic names. This tree is probably our Arabic name, which again is really derived from the Greek 'beri.' It is the fruit of the wild kind is dried and powdered, as was done with the lotus of the Lophophiagi. This powder, in Arabic, is called sawdoo-noob, in Persian, arud-i-khali, or ber-chooses.

LOUDEAC, a town in France in the department of Côtes du Nord, near the river Oust, a tributary of the Vilaine, and on the southern slope of the Monts d'Arrée. The population in 1831 was 6736 for the whole community, and 6366 for the commune. The principal manufactories are linen-thread and linens, which also constitute the chief articles of trade. There is a monthly fair for linens, horses and cattle. There are an agricultural society and an institution for instruction in draughting and some fiscal offices here. Lidda, the capital of a region which contained 551 square miles. It is divided into nine cantons, and fifty-six communes. The population of the arrondissement was 92,604 in 1831; 95,192 in 1836: a considerable number of the inhabitants are engaged in the linen manufacture.

LOUDUN. [Vienne.]

LOUGH DIYER, a provincial name for the bird called the Snipe (Mergus aterrimas, Lin.)

LOUGHBOROUGH. [Lancashire.]

LOUGHERA. [Galway.]

LOUIS (Ludwig in German, Ludovicus in Latin) is the name of many kings of France. Louis I., called 'le Bègue,' or the Stammerer, was the son of Charles the Bald, succeeded his father on the throne of France in 877. He claimed also the imperial crown against his cousin Carloman, son of Louis the German, but was defeated in battle, and driven out of Germany by the imperial lords, among others by Boson, the brother of his stepmother, Richilda. In order to conciliate them, he followed the example of his father, by parceling out the crown among his sons and nephews. Louis II., son of Charles the Simple, succeeded his father Louis II., together with his brother Carloman. Louis had Neustria, and Carcassonne Aquitania. Boson founded the kingdom of Arles, which included Provence. Deuhinby, Saxons and Franks gathered the Normans ravaged the northern coast of France, where at last they settled. Louis died in 882, and his brother Carloman remained sole king of France.

LOUIS IV., son of Charles the Simple, succeeded his father in 882. He was consecrated by the emperor Otto I. on the subject of Lotharingia or Lothaire, and also against the Normans, whose duke William, son of Rolfo, died, leaving an infant son. Richard, Louis' reign was also disturbed by revolts of the great vassals especially of Hugo, count of Leon, the father of Hugo Capet. Louis died in 954, and was succeeded by his son Louis.

LOUIS V., styled 'le Fainéant,' or 'do nothing,' son of Louis his father, was succeeded in 988. He reigned only 10 years, and died of poison, administered to him by his wife, the daughter of an Aquitanian lord. With him ended the Carolingian dynasty, and Hugo Capet took possession of the throne.

LOUIS VI., called 'le Gros,' son of Philip I., succeeded his father on the throne of France in the year 1189. To larger part of the kingdom was then the hands of the great vassals of the crown, over whom the king's suzerainty was
was but nominal. The king's direct authority extended only over Paris, Orleans, Bâtavie, Compiègne, Melun, Bourges, Amiens, and a few of Normandy and Berry, and their territories. The duchy of Normandy was in the possession of Henry I. of England, who had taken it from his brother Robert during the preceding reign of Philip I. Henry and Louis quarrelled about the limits of their respective states, and the French king had then the better of the French in France, which lasted for more than three centuries. Louis had the worst in several encounters. In 1129 he made peace, but war broke out again, when Henry of England was joined by his son-in-law the emperor Henry V, who entered Champagne in 1130. However, Louis had the better of the battle of Brantôme in 1137, and his forces were not seriously damaged. Louis, by the head of all his vassals, lay and ecclesiastical; even Suger, abbot of St. Denis, was there with the abbots of the abbey. These united forces are said to have amounted to 200,000 men, and the emperor thought it prudent to return to his French crown, though this was not the case say French historians. The same zealous assistance from his vassals is said in his quarrel with Henry of England as duke of Normandy, because the vassals considered it as their interest not to increase the power of their king. Meanwhile Henry of England having even one of his daughters in marriage to Coman, son of the duke of Brittany, the latter did homage to Henry of Brittany as a vassal of Normandy. (Hénaut, L'Abbe de l'Histoire de France.)

Louis le Gros, assisted by his able minister l'Abbé Suger, spending 11 years as a vassal of the crown, he was suing for the crown of the prince which the great vassals had usurped; he revived the practice of Charlemagne of sending into the provinces commissioners called messi dominici, who watched the judicial proceedings of the great lords in their respective domains, the abbots and bishops, and to the nearest great lord, and to the king for judgment at the great assizes. In most cases however the king had not the power of enforcing his own judgments. But another and a more effective measure of Louis le Gros was the establishment of the courts, which were remembered among the earliest benefactors of the French people. He granted charters to many towns, the inhabitants of which were thereby empowered to choose their local magistrates, and to administer the affaires of the community, subject however to the control of the king. The creation of the third estate, or commons, as a check on the overgrown power of the feudal nobles. A good sketch of the history of the French commons is contained in the Exposé des Mots de la Loi Municipale, pronounced by Jean Le Prieur, the king of Deputies, 9 February, 1829. Louis le Gros died at Paris in 1137, at the age of sixty, and was buried at St. Denis. He was succeeded by his son Louis VII., to whom he gave the king's coronation, and his place against the English and also a bear in mind, that the royal authority is a public charge, which you must respect the same account after your death.

LOUIS VII., called 'Le Jeune,' son of Louis le Gros, ruler of France, 1108-1131. He married Eleanor, heiress and heiress of William, duke of Aquitainia, a lady who was handsome and inclined to gallantry. Thibaut, count of Champagne, having revolted against the king, Louis took and burnt his town of Véty. St. Bernard, abbot of Clairvaux, advised Louis, in order to avenge for this cruelty, to go on a crusade; but the Abbé Suger, who was minister of Louis, and had also served the king's father, opposed this project. The seal of St. Bernard however prevailed, and the king set off with his wife and a large army in 1147. Suger, on his return, was confined by the king, on the law, were left regents of the kingdom. The crusade proved unsuccessful: the Christians were defeated near Damascus, and Louis, after several narrow escapes, returned to France in 1149. His first act on his return was to repudiate his marriage with Eleanor; the former base had been improved; but the bishops, to avoid scandal, dissolved the marriage on the plea that it was not valid because the king and queen were cousins. Suger, who was now dead, had strongly opposed it. Louis settled the dispute between the two kingdoms for his foresight, for Eleanor married Henry of England and Normandy, afterwards Henry II., by his marriage became possessed of Aquitainia, Poitou, Maine, and in fact over most of France, comprising the whole maritime ter- ritory from the Pyrenees to Havonie. Louis married Constance of Castile for his second wife. A war now broke out between him and Henry II. of England, which lasted several years, and ended by a peace of 1176, after which Henry as king of France attended the coron- ation of Louis's son, Philip II., called 'L'Abbe,' in 1179. Louis died in September, 1180, at Paris, being sixty years of age.

LOUIS VIII, styled 'Cœur de Lion,' succeeded his father Philippe Augustus in 1223. He had been engaged in wars with the English, from whom he took the Limousin, Perigord, Aunis, and all the rest of the country north of the Garonne. At the request of the pope, he made war against the Albigensians, and laid siege to Aignoun, where he died in 1226. Louis was succeeded by his son Louis IX., called 'St. Louis,' 1226-1270. Louis IX., called St. Louis, succeeded his father Louis VIII. when he was twelve years of age, under the regency of his mother Blanche of Castile. During the minority of the king, there was a constant struggle between the bishops of the king's council and Blanche, who was compelled to consult with the chief lords of the country. These were Thibaut, count of Champagne, and the count of Brittany. During this troubled period Queen Blanche displayed much character and considerable abilities. Her son, as soon as he was old enough, putting himself at the head of his faithful vassals, reduced the most refractory lords, and among others the count of Brittany, who came with a rope round his neck to ask pardon of the king, which was granted. Henry III. of England, who supported the rebels, was defeated by Louis near Saintes, upon which a truce of nine years was made, the king was ill. Louis had made a vow to visit the Holy Land, and in June, 1246, he set out for the East. He landed in Egypt, and took Damiet, but being defeated at the battle of Mansoura, he was taken prisoner, compelled to pay a heavy ransom, and was sent to Acre, where he died. It is said he sailed to Acre, and carried on war in Palestine, but with no success, till the year 1254, when he returned to France. The best account of this expedition is by Joinville, who was present at the Histoire de St. Louis, edited by Ducange, with notes, folio, 1668. Louis, on his return found ample occupation in checking the violence and oppressions of the nobles, whom he treated with wholesome rigour. He published several useful statutes, known by the title of 'Statuts de St. Louis,' he established a police at Paris, at the head of which he put a magistrate called prévôt; he cleansed the various trades into companies called confrairies; he established the college of theology, called la Sorbonne from the name of his confessor; he created a French navy, and made an advantageous treaty with the Venetians, and took the trading cities of the Venetians, Thesaurus Auctoritatum, vol. i. p. 986.) This same feeling of fanaticism led him to another crusade, against the advice of his best friends, in which he met his death. He sailed for Africa, land siege to Tunis, and died in his camp, the plague, in August, 1270. Louis Boniface VII., canonized him as a saint in 1297. Louis's brother Charles, count of Anjou and Provence, took the kingdom of Naples from Manfred of Sicily, and established there the dynasty of Anjou. (Joinville, Matthew Paris, and the French historian Albert de Saint Victor, 'Histoire des croisades,' 3 vols., 1831.)

LOUIS X., called 'Hutin,' an old French word meaning 'quarrelsome,' son of Philippe le Bel, succeeded his father in 1314. His uncle Charles de Valois had the principal share of the government during his reign, although the king himself was a great man, a man of genius and a lover of letters, the most famous of his reign was his marriage with Margaret in 1315, on the ground of adultery, and then married Clementine of Hungary. He carried on an unsuccessful war against the count of Flanders, to maintain which he increased the taxes, sold the judicial rights, and obliged the crown serfs to purchase their freedom. Louis died, after a short reign, in 1316, not without suspicions of poison. He was succeeded by his brother Philip V.

LOUIS XI., son of Charles VII., succeeded his father in 1461, being then this nineteen years of age. He had exhibited a duplicity of disposition, for which his father mistrusted him. He had revolted against his father in
the trans- and Louis the confinement. LOU diploma Most 499. gave butqueathed Charles, habit. leaving and considered do tiiere of'oorated Catholic, Galeazzo XII., applied of Burgundy, being taken by William, who was killed at the battle of Ravenna, the French abandoned Lombardy; and Maximilian Sforza, son of Ludovico, supported by the Swiss, assumed the ducal crown of Milan in 1512. Louis sent a fresh army into Italy under La Tranchis, and was defeated by the Spaniards, who took the city of Milan on January 1512; and thus after fifteen years of fighting, intrigues, and negotiations, the French lost all their conquests in Italy. Louis XII. has been styled by court historians 'the father of the people,' he was, in fact, kind-hearted, but he lived in the midst of a crowd of courtiers and was incapable of taking a hand in government. In order to protect his ambitious purposes he allied himself to the atrocious Borgias and the unprincipled Ferdinand; and the calamities which his troops inflicted upon Italy, the horrors of the sterner campaigns, the murder of Count Avagardao and two sons because they resisted the invaders, and other atrocities committed by the French commandants, are great stains on the memory of this 'paternal' monarch. Having lost his best troops, he reluctantly gave them up to the port, and, at the age of fifty-three, married Mary, sister of Henry VIII. of England. His young wife made him forget his years and the weakness of his constitution: 'on her account,' was the biographer of Boiardo, 'the sun rose without setting, and the pope, and, at the age of fifty-three, married Mary, sister of Henry VIII. of England. His young wife made him forget his years and the weakness of his constitution: 'on her account,' was the biographer of Boiardo, 'the sun rose without setting, and the pope, and, at the age of fifty-three, married Mary, sister of Henry VIII. of England. His young wife made him forget his years and the weakness of his constitution: 'on her account,' was the biographer of Boiardo, 'the sun rose without setting, and the pope, and, at the age of fifty-three, married Mary, sister of Henry VIII. of England. His young wife made him forget his years and the weakness of his constitution: 'on her account,' was the biographer of Boiardo, 'the sun rose without setting, and the pope, and, at the age of fifty-three, married Mary, sister of Henry VIII. of England. His young wife made him forget his years and the weakness of his constitution: 'on her account,' was the biographer of Boiardo, 'the sun rose without setting, and the pope, and, at the age of fifty-three, married Mary, sister of Henry VIII. of England. His young wife made him forget his years and the weakness of his constitution: 'on her account,' was the biographer of Boiardo, 'the sun rose without setting, and the pope, and, at the age of fifty-three, married Mary, sister of Henry VIII. of England. His young wife made him forget his years and the weakness of his constitution: 'on her account,' was the biographer of Boiardo, 'the sun rose without setting, and the pope, and, at the age of fifty-three, married Mary, sister of Henry VIII. of England. His young wife made him forget his years and the weakness of his constitution: 'on her account,' was the biographer of Boiardo, 'the sun rose without setting, and the pope, and, at the age of fifty-three, married Mary, sister of Henry VIII. of England. His young wife made him forget his years and the weakness of his constitution: 'on her account,' was the biographer of Boiardo, 'the sun rose without setting, and the pop...
acquired a considerable influence in the affairs of the Empire. In 1652 Richelieu took Le Rochelle, the stronghold of the Protestants of France, which had often whatsoof the king's forces under the former reigns. The French armies took an important part in the thirty years' war; they acted on the Rhine in concert with the Swedes, which made the emperor of the imperial dignity for Louis XIV. He himself supporting, through his agents at the diet, the pretensions of the elector of Bavaria, and representing and exaggerating the danger to the liberties of Germany which would attend another election of an Austrian prince to the imperial throne. It was soon found however that the elector of Bavaria was not likely to be nominated, and Mazarin then intrigued separately with the electors in favour of Louis. He bribed, by actual disbursements of money and ample promises of territorial aggrandisement, the archbishops and electors of Treves and Cologne, as well as the elector of Hesse, and even the elector of Brandenburg. Had he succeeded in gaining over the elector of Mayence, John Philip de Schellendorf, chancellor of the empire, Louis XIV. would have succeeded to the last of the House of Hapsburg, and the whole of Low Germany would have been in his hands. His political abilities were not inferior, and about the same period, the House of Austria was reduced to almost the same miserable circumstances in which Louis had put it, and which Louis took an active part in. The history of such a reign requires volumes, and has been written or adverted to and commented upon by numerous historians who have treated of that age. But the best works for making us acquainted with the character of Louis, and the progress of his government, and the condition of France under his reign, are the contemporary memoirs of S. Simon, Dancau, Louville, Noailles, Cardinal de Rez, Madame de Motteville, and others, and above all the writings of Louis XIV. himself, who nearly filled half a century. Cardinal Mazarin, an Italian by birth and a pupil of Richelieu, but inferior to his master, was the minister of the regency during the minority of Louis. He continued the war against Spain and the emperor of Germany in conjunction with the Swedes. Turenne, the marshal of Grammont, and the duke of Enguiner, afterwards the great Condé, distinguished themselves in those wars. The treaties of Münster and Osnabrug (1648) put an end to the thirty years' war, and for the last five years of Louis's minority a state of peace was maintained. [FOND, La.] The parliament of Paris and several of the high nobility revolted against the authority of the cardinal. Louis, then ten years of age, the queen regent, and Mazarin, were obliged to leave the capital in January, 1649, and this humiliation seems to have made a deep impression on the mind of Louis, and to have contributed to render him mistrustful, arbitrary, and stern. After some fighting, peace was made, and the court re-entered Paris in the month of August. This was the same year that Louis made duke of Orléans, the grand-nephew in succession to the last of the House of Orleans, and incollary abolished. The prince of Condé, who had been the means of appeasing the civil war, having given offence to the queen and the cardinal, was arrested, and Turenne and other Frondeurs began again the civil war in the following year. In February, 1650, the people of Paris, on the order of the release of Condé; Turenne made his peace with the court, and Mazarin was exiled by a sentence of the parliament of Paris. Condé however continued the war, and being joined by the duke of Orleans, took the city of Pezenas, which again fell to the flamens. In October, 1652, an arrangement took place, the king re-entered Paris, Condé emigrated to join the Spaniards, the cardinal de Retz, one of the chief actors in the disturbances, was put in prison at Vincennes, and Mazarin himself returned to the ministry. In 1654 Louis XIV. made his first campaign in Flanders against the Spaniards. In the following year he concluded a treaty of alliance with Cromwell against Spain. The war continued that and the next year with various successes; Turenne commanded the French troops, and the prince of Condé fought on the side of the Spaniards against his own country.

In 1657 the emperor Ferdinand III. died, and Mazarin intrigued to prevent the election of his son, Leopold, and to elect the king of Spain for Louis XIV. He began by supporting, through his agents at the Diet, the pretensions of the elector of Bavaria, and representing and exaggerating the danger to the liberties of Germany which would attend another election of an Austrian prince to the imperial throne. It was soon found however that the elector of Bavaria was not likely to be nominated, and Mazarin then intrigued separately with the electors in favour of Louis. He bribed, by actual disbursements of money and ample promises of territorial aggrandisement, the archbishops and electors of Treves and Cologne, as well as the elector of Hesse, and even the elector of Brandenburg. Had he succeeded in gaining over the elector of Mayence, John Philip de Schellendorf, chancellor of the empire, Louis XIV. would have succeeded to the last of the House of Hapsburg, and the whole of Low Germany would have been in his hands. His political abilities were not inferior, and about the same period, the House of Austria was reduced to almost the same miserable circumstances in which Louis had put it, and which Louis took an active part in. The history of such a reign requires volumes, and has been written or adverted to and commented upon by numerous historians who have treated of that age. But the best works for making us acquainted with the character of Louis, and the progress of his government, and the condition of France under his reign, are the contemporary memoirs of S. Simon, Dancau, Louville, Noailles, Cardinal de Rez, Madame de Motteville, and others, and above all the writings of Louis XIV. himself, who nearly filled half a century. Cardinal Mazarin, an Italian by birth and a pupil of Richelieu, but inferior to his master, was the minister of the regency during the minority of Louis. He continued the war against Spain and the emperor of Germany in conjunction with the Swedes. Turenne, the marshal of Grammont, and the duke of Enguiner, afterwards the great Condé, distinguished themselves in those wars. The treaties of Münster and Osnabrug (1648) put an end to the thirty years' war, and for the last five years of Louis's minority a state of peace was maintained. [FOND, La.] The parliament of Paris and several of the high nobility revolted against the authority of the cardinal. Louis, then ten years of age, the queen regent, and Mazarin, were obliged to leave the capital in January, 1649, and this humiliation seems to have made a deep impression on the mind of Louis, and to have contributed to render him mistrustful, arbitrary, and stern. After some fighting, peace was made, and the court re-entered Paris in the month of August. This was the same year that Louis made duke of Orléans, the grand-nephew in succession to the last of the House of Orleans, and incollary abolished. The prince of Condé, who had been the means of appeasing the civil war, having given offence to the queen and the cardinal, was arrested, and Turenne and other Frondeurs began again the civil war in the following year. In February, 1650, the people of Paris, on the order of the release of Condé; Turenne made his peace with the court, and Mazarin was exiled by a sentence of the parliament of Paris. Condé however continued the war, and being joined by the duke of Orleans, took the city of Pezenas, which again fell to the flamens. In October, 1652, an arrangement took place, the king re-entered Paris, Condé emigrated to join the Spaniards, the cardinal de Retz, one of the chief actors in the disturbances, was put in prison at Vincennes, and Mazarin himself returned to the ministry. In 1654 Louis XIV. made his first campaign in Flanders against the Spaniards. In the following year he concluded a treaty of alliance with Cromwell against Spain. The

With the death of Cardinals Mazarin began the real emancipation of Louis XIV., for from that moment took the reins of the government entirely into his hands. He dismissed and imprisoned Fouquet, the superintendent or minister of finance, and had him tried on charges of peculation and treason by an extraordinary commission, which condemned him to banishment; but Louis aggrandized the sentence by shutting him up in the castle of Pignerol, in the Alps, where he died in 1660. In appointing Colbert in the house of Fouque Louis made a good choice,
and much of the splendour of his reign is due to that able minister. [ Colbert, Jean Baptiste.] The ruling principle of Louis XIV. was pure absolutism. The king, according to his conception of the nature of monarchy, all authority, were vested in him. "L'état, c'est moi!" was his well-known expression. This form of government, he said, was the best suited to the character of the nation, its habits, its tastes, its situation. In giving instructions to his minister, he had in mind that "all which is found in the extent of our dominions, of whatever nature it be, belongs to us. The monies in our treasury, as well as those which are in charge of the receivers and treasurers, and those which we leave in the hands of our subjects for the purposes of the public, are as much under our care. You must be convinced that kings are absolute lords, and have the full and entire disposal of all property, whether in the possession of the clergy or of laymen, and may use it at all times as wise economies and the well-being of the lives of all are involved. And if they are to be sensitive and sparing of them... He who has given kings to men has ordered them to be respected as his lieutenants, reserving to himself alone the right of examining their conduct. It is his will that whoever is born a subject should obey and submit to him without reservation... The essential defect of the monarchy of England is that the prince cannot raise men or money without the parliament, nor keep the parliament assembled without compelling thereby his own authority." (Guerres du Livre. Paris, 1616).

Louis XIV. commenced the work begun by Richelieu: he changed France from a feudal monarchy into an absolute one. Ximenes, Charles V., and Philip II. had effected the same change in Spain; but they had the clergy and the Inquisition to aid and share their absolutism. In Spain absolutism of Spain stood longer than that of France. Louis entered the high nobility from their rural mansions, attracted them to court, emptied them about his person, gave them pensions or placed them in his regular army, and completely broke their former power. With regard to the church, he distributed its temporalities to his favourites, both clerical and lay, bestowed livings and pensions and abbacies it commanded on abbey servants, and the absolutism of France stood longer than that of Louis. He treated the pope with great asperity; twice he raised the pontiff, through his ambassador, in the middle of Rome [Alexandre VIII., Innocent XI.]; twice he seized upon Avignon, as Dr. Johnson tells us, he tells us, he tells us. In his old age he became very devout, interdicted, and superstitious, and yet he mistook the papal court: "You know," he wrote to his ambassador, "that the court of Rome always seeks for opportunities and pretences to disturb the political and religious relations from other states throughout the necessities of the times and the political expediency it afterwards considers as its own right; and that when at last a king takes up the defence of his own prerogatives, he finds himself involved in much more serious matters than if he had strung up against encroachment at first." (Lettre au Roi au Cardinal d'Estrees, 27 Mai, 1703.)

After the death of Nautin, Louis admitted no more ecclesiastics into his court. The spirit of jealousy of the Gallican church made it less dependent on Rome and more subservient to its crown; and the hostility of the magnificacy against the clergy furnished the king with an arm always ready to check any mutinous disposition in the clerical body. Louis XIV. made the throne support the church, and did not lose his church in support of the throne. He endeavoured to stop the increase of monks and monasteries, whom he describes, in his 'Instructions pour le Dauphin," as "useful to the church and benediction to the se".

The parlements were as subdued, like the nobility and clergy, by the absolute will of Louis. When only seventeen years of age, in 1655, the parlement of Paris having made some remonstrances against the edict of the king concerning the court, he rode from Lunéville to Paris, to the hall of the parliament, board as he was, holding his whip in his hand, and, addressing the first president, told him that the meetings of that body had produced calamities enough, and that he ordered them to cease discussing his edicts. "And you, Mr. President," said he, "I forbade you to allow it."

In 1657 Louis issued an act forbidding the parlement of Paris from making any remonstrances concerning the royal edicts before registering them, and not until eight days after it had been merely registered, that he might address his written remonstrances. From that time and to the end of his reign the parliament offered little or no impediment to the royal authority; it withdrew itself from state affairs, and confined itself to its judicial functions.

Having destroyed all opposition from the only orders which enjoyed any consideration in the state, Louis took care to make it known to the tiers etat, or commons, that it was not for its advantage that he had hitherto the privileged classes. In fact, this did not prevent the tiers etat from forming a class, but as an ignoble crowd of roturiers who were doomed to work for him and to obey his mandates, and from amongst whom he despaired of time to time to select some individuals as objects of his favour. In his celebrated edict of February, 1725, the kings of France, he says: "It is an insulting contempt of all persons of 'ignoble birth' who are 'insolent enough' to call out gentlemens to fight; in case of death or serious wounds resulting thereafter, he promises them to be strangeled and their goods confiscated, etc., etc."

He was the same persecuted by his courtiers who ought to presume to fight against 'unworthy persons and for abject causes.' This law, most offensive to the great mass of the French people, was confirmed after Louis's death by the edict of February, 1725, and continued in vigour until the fall of the Bourbons.

Louis established that system of centralization in the administration which has been followed and rendered more complete by the various governments that have succeeded each other till our own days, and which renders France the most perfect country in the world of its size. Under Louis the executive residing at Paris is felt at every step by every individual in the most remote corners of the kingdom. He at the same time began the first labours for a regular system of legislation, by issuing separate ordinances for civil and religious laws in the fields of commerce, of trade, agriculture, industry, arts, and forests, and for the marine, and which with all their imperfections formed the basis of distinct codes. The education of Louis had been very imperfect, and he was himself in great measure uninformed; but he encouraged science and the literary tastes with which he believed he enriched France. His reign was a brilliant epoch of learning in France. With regard to the arts, he had more pomp than taste; he felt a pride in conquering obstacles, as the millions he lavished, in vails, in a most unfavourable locality, amply testify.

Louis XIV. hated the Protestants, not so much from religious bigotry as because he considered them as rebellious subjects; he wanted uniformity in everything, in religion as in civil life. France was not in a position to afford a tolerative measure, the revocation of the edict of Nantes, in 1685, by which Protestantism was proscribed in France, lost thousands of its most industrious citizens, who required to England, Switzerland, Holland and Germany, falling 20,000; Colbert to encourage French industry were rendered abortive by that cruel and fanatical act, of which the revocation of the Edict of Nantes and the war of extermination which followed were remote consequences. The persecution of the Protestants was another consequence of Louis's intolerance.

The foreign wars of Louis XIV. proceeded in great measure from the same ruling principles or prejudices of the mind. He disliked the Dutch, whom he considered as mercantile plebeians, heretics, and republicans, a body like that of the Jews against the Dutch, and it produced similar results to his empire. Colbert's same principle of establishing uniformity in everything; the same mania for a unity and singleness of power, which both mistook for strength; the same ambition of making France the ruling power in Europe, he considered an absolute rule, were alike the dominant principles, or rather passions, of the legitimists and most Christian king, and of the plebeian 'cult and
champion of the Revolution.' Several of the plans and schemes of Louis XIV., relative to foreign conquests, were found in the archives, and were revived and acted upon by Bonaparte.

The war of Louis XIV. against the emperor Leopold, Holland, and Spain, was ended by the treaty of Nymegen, 1678. Louis kept the Franche Comté and part of the Spanish Netherlands. The war broke out again in 1689, between Louis on one side, and the Empire, Holland, and England on the other. Louis undertook to support James II. in Ireland, but the battle of the Boyne and the capitulation of Limerick put an end to the hopes of the Stuarts, and James II. passed the rest of his life in exile at St. Germain-en-Laye, where he died a pensioner of the French king. At last Louis caused the last of the most atrocious acts recorded in the history of modern warfare. This was no less than the devastation of the Palatinate by his commanders. A district of more than twenty English miles in length, with the towns of Heidelberg, Mannheim, and Würzburg, was razed, plundered, and burnt, in cold blood, under the pretence of forming a barrier between the French army and its enemies. A cry of indignation resounded throughout Europe against this own defence of the country. It was known that James Stuart solicited, from his exile at St. Germain, the assistance of the emperor against William of Orange, in the name of legitimacy and the Catholic Church. Leopold in his answer observed, 'that there are no people of this sort in Germany.' But this did not prevent other nations, who on one side supported the Turks, the enemies of all Christendom, to the detriment of the Empire; and on the other, having roused and burnt innocent towns, which had surrendered by capitulations signed by the head of the kingdom of Germany, the inhabitants, who, on the churches, carried away the inhabitants as slaves, and treated Catholics with a cruelty of which the Turks themselves would have been ashamed.' (Letter from the Emperor Leopold to James II., 9th April, 1689, in the Mémoires du Roy Louis XIV., 3 vol.)

Louis XIV. was in 1697, the Duke of Marlborough, by the appointment of his predecessor, Philip of Anjou, afterwards Philip V., of Spain, who, except his nephew Louis XV., was the only legitimate descendant of Louis XIV. who survived that king. The monarch of Louis XIV., was restored to the throne of France by the treaty of Aix-la-Chapelle, 1713, which acknowledged the duke as sole regent. In gratitude the Regent issued, on the 15th September, a declaration, in the name of the king, restoring to the parliament the right of making remonstrances on the royal edicts, letters patent, and other acts of that nature. The duke of Orleans had acquired an unfavourable reputation as a minister, and as a legislator. This corruption was partly sacrificed to the Abbé Dubois, an unprincipled man, who passed for a man of business, and was afterwards his minister. Vicious as the duke was, he was accused of crimes of which he was guiltless.

The sudden death of the children and grandchildren of Louis XIV., at short intervals from each other, had given rise to the most horrible suspicions. The death of the duke of Orleans, brought forward a claim of the eldest son of Louis XIV., who was rejected. The 'Mémoires de St. Simon,' already quoted, which include the period of the regency, contain the most correct sketch of the character of the duke of Orleans, a character not rightly understood till the publication of that work.

The Regent began well: he reformed several of the most outrageous abuses of the late reign, he liberated a number of individuals who had been for years immured in the Bastille; he endeavoured to establish a spirit of conciliation with the Protestants and the philosophers of France. The general peace of Europe, concluded the triple alliance of the Hague in 1717, between France, England, and Holland, and gave up altogether the cause of the Pretender. Unhappy Louis, for France, the disorder in which he found the finances, and the foible deficiency in the revenue, made him listen to the wild schemes of Law, which ended in disappointment and the ruin of thousands of families. [Law, John.]
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encouraged a conspiracy against the duke of Orleans, the object of which was to excite a revolution against him, to deprive him of the regency by a resolution of the three estates of the kingdom, and to place Philip himself at the head of the regency. The plot was discovered, several of the leaders, who were chiefly Britons, were punished by death, and in 1719 the Regent declared war against Spain. The war was not long lasting; only one battle was fought, and the Spaniards were driven from the national soil, and Philip of Spain made peace with France in 1720. [ALBERONI.] In 1722 Dubois, who had been made a cardinal, became prime minister of France.

In February, 1723, Louis XV., having completed his fourteenth year, was declared of age, and the regency of the duke of Orleans terminated. The same year Dubois died, and was followed to the grave by the duke of Orleans a few months after. The duke de Bourbon Condé was made president of the ministry, the king's predecessor, and afterwards cardinal, was substituted for him. The seventeen years of Fleury's administration, which ended with the king's death in 1751, were, without a doubt, among the best of the reign of Louis. [FLEURY, ANDRE HERCULUS.] Fleury restored order in the finances, and credit and commerce revived.

In 1733 the war of the Polish succession broke out, by the death of king Augustus II., of Saxony, and Gustavus II. of Sweden. But the king of Prussia, Stanislaus, the old rival of Augustus, against Austria and Russia, who supported the son of Augustus. [AUGUSTUS III.] The war was carried on between France and Austria both on the Rhine and in Italy. In the latter country the French, joined by the Spaniards and the king of Sardinia, obtained great success. Don Carlos, son of Philip V., conquered the kingdom of Naples and Sicily, and thus a third Bourbon dynasty was founded in Europe. Peace was made at 1736, in which the duchy of Lorraine was annexed to France for life, to be united after his death to the crown of France. Francis, duke of Lorraine, had Tuscany in exchange.

In 1741 the war of the Austrian successor broke out, in which France took part, against the advice of Fleury, who was succeeded in the king's cabinet, and minister of state, by Madame de Geoffrin. The war continued till 1748, when it was terminated by the treaty of Aix-la-Chapelle. France derived no advantage from this unsuccessful war, and the victories of the French were attributable to the valor of the king, which was the last event of the reign. Louis X.V. was present at the battle of Fontenoy, in May, 1748, between the English, commanded by the Duke of Cumberland, and the French, commanded by Marshal de Saxe, in which both armies were victorious. In 1758 the English took possession of Minorca, and asserted its possession, which was extinguished by the Treaty of Paris. This war was of great advantage to France. The French were beaten at Rosbach by Frederick, in 1757, and were defeated again at Minden by the Duke Ferdinand of Brunswick, with the loss of 8,000 men, cannon, baggage, military chest, &c. In America, in 1762, the British were forced by means of six thousand flat-bottomed boats, by which landings were to be effected on various points of the coast, was revealed to the English ministry by an Irishman called Macallister, and was abandoned. At last by the peace of Paris, February 10, 1763, France formally ceded Canada, Nova Scotia, and its other North American colonies, besides Granada, Dominica, and Tobago in the West Indies; its navy never after recovered from its losses, its finances were exhausted, and its commerce destroyed. This was the last war of Louis XV., a war which was undertaken really and terminated in a disastrous and humiliating manner. The feeling of disaster resulting from it sunk deeply into the heart of a people so vain and sensitive as the French, and it completely dispirited them. They were now with the former popularity of Louis, which had been a very great one, and the king had now abandoned himself to gross licentiousness, and had become careless of state affairs. The mad dog of a successor of Louis XV., finished his days in the exile, and was afterwards executed.

Louis died at Versailles, on the 10th May, 1774, 64 years of age. Two sons whom he had had by his wife were both dead: the eldest, the Dauphin, died in 1765, and left by his wife, a Saxo prince, three sons, who have been a source of trouble to the kings of France. The last of these was Louis XVI., and Charles X. Louis XV. had also by his wife several daughters, besides illegitimate children.

It was under Louis XV. that the corruption of morals and the poverty spread in France. A alarming extent among all classes, being encouraged by the pulpit, and by the sensual philosophy which were taught by several men of letters. Both these causes, added to the general poverty, national humiliation, and ruined finances, prepared the way for the explosive change which took place under his unfortunate successor. (Lacretelle; Fantin des Odoard; Voltaire, Le Prince de Louis XIV.)

LOUIS XVI., grandson of Louis XV., succeeded him in 1774, being then twenty years of age. He had married Maria Antonia of Austria, the sister of Maria Theresa, and the daughter of Joseph II. He chose for his minister of finance Turgot, a honest and enlightened man, who, in concert with his colleague Malesherbes, perceived the temper of the times, and wished the king to take the reform into his own hands. He abolished the corvées and other feudal exactions, equalizing the direct taxes over the kingdom, granting liberty of conscience and recalling the Protestants, reforming the criminal code, composing a uniform civil code, giving freedom of trade, rendering the civil power independent of the state; he reformed the universities, and laid the foundations of the convents, and establishing a new system of public education. These were the real wants of France; if the could have been satisfied, the revolution would have been unnecessary. But the clergy and the nobility strongly opposed the part of the French monarch. On the 14th July, 1789, the people of巴黎, the great stumbling-block of Louis administrated.

He however went on for some years, during which he was engaged in a war against England, which was very popu- 
lar with the French, humbled as they had been in the previous struggle with that power. The project of the war was a regular one for an absolute monarch to embark in; in support of the revolted colonies of North America, which had declared their independence of Great Britain, and which has been since considered by many as a political blunder. In 1776, a treaty of commerce and alliance was signed at Paris, between the French cabinet and Franklin and Siles. 

Dubois.
of the United States, by which the latter were acknowledged by France as an independent community. In the following May a French fleet under count d'Estaing sailed to America in lieu of the first hostilities took place at sea, and on the 10th July France declared war against England, and 40,000 men were assembled in Normandy for the invasion of England. This plan however was not carried into effect, because the French and Spanish defeated the English off the coast of England, and the contrary winds. In America the French auxiliary troops, joined to the Americans, were successful against the English. [FAYETTE, L. A.] At sea many engagements took place between the French and the English, both in the Atlantic and the Indian seas, without any very decisive advantage on either side; but on the 12th April, 1782, the French Admiral De Grasse was completely defeated by Admiral Rodney off the island of Dominica, with the loss of five ships. This was a final and unqualified defeat of the French; and upon the same year the attack of the French and Spaniards upon Gibraltar failed. [Asmen.] In September, 1783, a peace was concluded at Versailles; England acknowledged the independence of the United States, and gave up to France the Western territories. The meantime the financial embarrassment of the French Government went on increasing. Necker, a Genevese banker, wealthy and retired from business, having become minister of finance in 1776, made many reforms, effected a new and more economical system of finance. He succeeded in collecting, in the provinces, a number of Frenchmen, known as the Jacobins, who were prepared to give the king a new constitution. The king, who had been in constant difficulty with his ministers, was prepared to accede to the wishes of the Jacobins. Necker was dismissed, and Calonne, a more plausible and courtly person, was substituted. He managed to go on a little longer, involved himself in a dispute with the Parliament of Paris, and at last, being unable to proceed any further, he proposed to the king to call together an assembly of the nobles and clergy of the kingdom from the various provinces, to consult upon the means of supplying the deficiency in the revenue, which Calonne stated to amount to 110 millions of livres. This meeting was held in February, 1789. These states had always consisted of the three orders, clergy, nobility, and the third estate, or commons. Every order formed a separate house, in which it discussed the measures proposed by the government, and decided by a majority of votes. By this means any project of law dangerous to the kings' rights was protected by the veto of the two houses, and was therefore lost. Necker, to obviate this difficulty, proposed to give to the third estate a double vote, so as to balance the votes of the other two houses. The king, alarmed by the demands of the assembly of the third estate, and this was the beginning of the Revolution. It is remarkable that Monsieur, the king's brother, afterwards Louis XVIII, was one of those who supported this organic change. By the 6th of May the three estates having assembled in the common-hall, the king opened the session by a temperate speech, which was much applauded, after which the clergy and nobility withdrew to their separate rooms to deliberate among themselves. The third estate remained in the common-hall, where the new constitution for France, presided over by Louis, who, after making some remarks on what he conceived to be its deficiencies, swore to observe it. This act acquired him a Vol. XIV.-2
...few moments' popularity; and the assembly, having stated that the object for which it had met was completed, closed its sitting on the 30th September. The assembly consisted of 1116 members, of whom 729 were members of the delegations, 30 were judges and other magistrates, 298 belonged to the parochial clergy, 241 were gentlemen of noble birth, 48 archbishops and bishops, 35 abbots and canons, 176 merchant and landed proprietors, and the rest physicians and men of other professions. If they were not always careless in their duties, they were always properly consulted, for the majority were certainly sincere in wishing to maintain the kingly office, which they thought compatible with democratic institutions. Through a mistaken delicacy however they committed a very serious blunder before they were absolved; for the result showed that no member of that convocation should be eligible to the next assembly of the representatives of the nation, which became known by the name of the legislative assembly, and which was composed of much worse materials. The majority of the legislative assembly were men hostile to the crown and principles altogether; they were divided between Girondins and Jacobins. [Girondins.]

They began by sequestering the property of the emigrants; they issued intolerant decrees against the priests who would not swear obedience to the state; these priests, Provoking the war against Austria and Prussia, encouraged republican manifestations in various parts of the country, and even in the army; and, judging the grants and other people disaffected to the new order of things (the word "incivisme" was invented to designate this new offence), and issued an enormous quantity of paper money, which quickly became depreciated, added to the general misery. The legislative assembly were men hostile to the crown and principles altogether; they were divided between Girondins and Jacobins. [Jacobins.]

The King endeavoured, by the use of his veto, to check this headlong career. An insurrection in June, 1792, was the consequence; the palace of the Tuileries was assailed and entered by the mob, which treated the royal family with the greatest insolence, threatened their lives, and obliged the king to put on a red cap and show himself at the window to the crowds below. A second insurrection, better organized, with the avowed object of abolishing the kingly office, was supported by a party in the legislative assembly. The king was persuaded by the Tuileries, the Tuileries, and after a desperate defence by the Swiss guards, entered it and massacred all the inmates. The king and royal family had time to escape and take refuge in the hall of the legislative assembly. The assembly deposed the king, sent him and his family to the Temple, and, after a repulse of the royalists, convoked a national convention to exercise the sovereignty in the name of the people. In September the massacres of the political prisoners began; the cry of "aristocraff became a sentence of death against any obnoxious person. On the 21st May a national convention was opened; it met and shortly after prepared to bring the king to trial. The principal heads of accusation were, his attempt to dissolve the states-general in 1789, his escape to Varennes; and other acts previous to his accepting the constitution of 1791. Since his acceptance of it there was no charge that could be substantiated against him, except the exercise of the prerogatives given to him by the constitution, such as the veto, and changing his ministers. The rest were mere malversations and surmises of having bribed deputies, corresponded with the enemies of the state, etc. The trial began on the 10th November, 1792. The Girondins and the Jacobins united against Louis, and he was found guilty of "treason and conspiring against the nation." The sentence was pronounced on the 16th January, 1793. Of 721 members present who voted in the convention, 356 voted for death unconditionally, 284 voted for imprisonment and banishment, and the rest voted for death, but with a respito, hoping thereby to save his life. The majority which sent Louis to the scaffold was only five.

On the 21st January, 1793, Louis XVI. was taken in a coach to the Place Louis XV., and his head was fixed. He appeared silent and resigned, and engrossed by religious thoughts. Having ascended the scaffold, he attempted to address the people, but Berruyer, the commandant of the national guards, ordered the drums to beat, Louis had his coat torn off his back, the cap removed, and laid his head on the block. He was beheaded at ten o'clock in the morning. His consort Marie Antoinette was tried, condemned, and beheaded in the following October. The character of that unfortunate princess has been rescued from unmerited obloquy and the malignity of her enemies by Madame Campan in her "Memoires sur la Vie privee de Marie Antoinette," London, 1823. Louis left one son, Joseph, born May 13, 1781, and one daughter, who married her cousin the duke of Angoulême.


LOU XVI., due de Normandie, second son of Louis XVI., styled Dauphin after his elder brother's death in 1789, remained in prison in the Temple after the death of his parents, and there he died of disease and privation, on the 9th of June, 1795. He had supported Louis XVI. by the royalists after his father's death.

LOU XVIII., Stanislas Xavier, count of Provence born in 1755, was also styled 'Monseigneur' during the life of his brother Louis XVI., who, just before his death, wrote to him, appointing him his successor. After the fall of his nephew, Louis XVIII., in 1795, he assumed the title of king of France and of Navarre, although he was then an exile, and he was acknowledged as king by the Royalist emigrants, who composed a small court around his person. He had shown his liberal disposition in favour of rational reforms in France in the first period of the Revolution, but the violence of the Jacobins obliged him to emigrate in 1791. He lived for some time at Verona, in the Venetian territories, which he was obliged to quit when Bonaparte invaded Italy in 1796, and was imprisoned at Naples for some time. He was then captured by the Austrians, and at last settled at Warsaw, but in 1803 removed to Mitau in Courland, under the protection of Russia. By the peace of Tilsit, 1807, he was obliged to leave the Continent, and he repaired to England, where he fixed his residence. He died in London, 1824. The events in France opened the way for his return to the throne of his ancestors. He landed at Calais in April of that year, and proceeded to St. Owen, from whence he issued a proclamation acknowledging himself as a constitutional, not an absolute king; promising the speedy publication of a charter, a total oblivion of all the past, and guaranteeing all the possessors of what was called national property. On the 4th of June he laid before both the senate and legislative body a charter which he had drawn up with the assistance of his ministers. This charter became the fundamental law of the kingdom, and such it remains to this day, with a few alterations introduced in 1814.

Louis was sincere in his professions, but he was surrounded by disappointed emigrants and old royalists, whose影响 did not bear much fruit. He was able to resist his enemies on the side against him the Bonapartists, a formidable body including the greater part of the army. A conspiracy was hatched against Louis, Bonaparte returned from Elba, as Louis, forsaken by all, retired to Ghent. [Bonaparte, after his return from Elba, was again to Louis the way to Paris; but this time he appears as an insulted and betrayed monarch. Those officers who in spite of their oaths to Louis, had barefacedly favoured Bonaparte's usurpation, were tried and found guilty of treason; some were shot, and others exiled. The Chamber of Deputies, which was elected under the excitement of this second restoration, proved ultra-royalist in principle, and went further than the sovereign. He banished all those who had voted in the convention for Louis XVI., and had the office of the ministry under Napoleon after his return from Elba. Meanwhile sanguinary reactions took place in various parts of France, especially in the south, where the old animosities of the Catholics against the Protestants was revived by the brutal means of forced extirpation. At last Louis himself saw the danger to which the violence of his pretended friends exposed him, and he dissolved the chamber, which was styled 'Chambre Introuvable.' In the new elections the moderate constitutional party regained the ascendency, and the 20th January, 1812, the Council of Ministers was dissolved. The abdication of Louis was Count Decazes. But the assassination of his nephew, the Duke of Berry, by a fanatical republican, in February 1820, again alarmed the court, and restored the influence of the ultra-royalists. Decazes was dismissed, and the 25th January, 1820, the constitutional party in power was dismissed. The king returned to Paris, and the national guards took the president of the Convention, and the news was altered, the newspapers were printed under a censorship, and other measures of a retrograde nature were adopted. No open violation of the constitution however was committed. In 1823 Louis, in concert with the Northern provinces,
an army into Spain under his nephew the duke of Angoulême, to rescue Ferdinand from his state of thraldom.

[Ferdinand VII.] The expedition was successful; it restored Ferdinand to the plenitude of his power; but it did not succeed in re-establishing his personal government. In September, 1824, Louis XVIII. died, having been a long time ill and unable to walk: he retained to the last his mental faculties and his self-possession. He left no issue, and was succeeded by his brother Charles X. Louis had a cultivated mind, considerable abilities, and a pleasing address: his ideas were enlightened and liberal, and in ordinary and settled times he would have proved an excellent constitutional king; as it was, he managed to steer tolerably well between extreme opposite parties, and in a most critical period. He died, in 1824, the account of his emigration, "Récit d'un Voyage de Paris à Bruxelles et Coblenz," which is curious. (See also *Mémoires de Louis XVIII,* par le Duc D'. An assumed title, Paris, 1825.)

LOUIS, or LOUIS D'OR, a gold coin in the old system of France, first struck under Louis XIII, in 1641. Kelly says, "the Louis d'ors coined before 1726, which passed then for 30 livres, were coined at the rate of 36½ per French mark of gold; 23 carats fine; the remedy in the weight was 14½ carats, and the thickness the former of a carat. Those ceased to be legal coin in France as far back as 1726; but they still continued to circulate through many parts of Germany and Switzerland, where they had a fixed value, and were known by the name of "the old Louis d'ors" or "Louis coins." Place rises his history of Coin of the different species of Kruse, Ricard, and in other books on exchange printed before 1766." From the year 1726 till 1765 Louis D'ors were coined at the rate of 30 to the mark of gold 23 carats fine, and with a remedy of 15 grains in the weight, and of a carat in the alloy; thus at least 39spieces were coined from a mark 213 carats fine. These ceased to be current in France in 1766. "In Holland, Germany, &c., they were called "new Louis d'ors," to distinguish them from those last mentioned." In 1765 and 1766 all the gold coins, such as the Maurises, and a great many that might be melted down; and a new coinage then took place at the rate of 32 Louis d'ors to the mark, of the same degree of fineness, with the same allowances for remedy as above: thus at least 39spieces were coined from a mark of gold 23 carats fine. The intrinsic value of this new Louis d'or (allowance being made for the remedy) was 18s. 9d. sterling; and 1l. sterling = 25 livres 10 sous Tournos in gold. Louis D'ors were considered as a current coin in most parts of the Continent; though in England they were sold only as merchandise. The Louis d'ors were raised to its present value, according to the last-mentioned order, their price fluctuated from 18s. 6d. to 21s. sterling. Upon the return of the Bourbon family, the twenty-five pieces struck by Louis XVII., in imitation of the Napo-

LOUISIANA, the most south-western of the United States of North America, comprehends the countries on both sides of the Mississippi between 26° 50' and 34° N. lat., and 88° 50' and 94° 30' W. long. The Gulf of Mexico washes its shores on the south for about 400 miles. The Sabine river separates it on the west from the Mexican province of Texas. This river constitutes the western boundary for 90 miles; the remainder of the line, about 60 miles, runs along the Mexican meridian of 94° to 33° N. lat. On the north the parallel of 33° N. lat. constitutes the boundary-line between Louisiana and Arkansas for 172 miles. Between 33° and 31° N. lat. the Mississippi separates Louisiana from the state of Mississippi, the course of the river between these parallels being 10 miles. The remainder of the boundary between these states lies along 31° N. lat., between the Mississippi and Pearl rivers, and then along the last-mentioned river to its mouth, which is 106° 24' W. long. The area of Louisiana is calculated at 48,220 square miles, or about 2000 miles less than that of England.

Surface and Soil.—Louisiana presents a great variety of surface, though it is a plain country, and only in a very limited extent of modern drainage. The surface of the plains are on different levels, a circumstance which causes a great variety in soil, climate, and agriculture, and gives to the different regions entirely different features. The delta of the Mississippi extends along the shores of the Gulf of Mexico, from the mouth of the river (91° 40' W. long.) to the Pass de Marianne (69° 15' W. long.) and Lake Borgne on the east, and comprehends a coast-line of about 250 miles. From Lake Borgne its boundary runs westward through the lakes Pontchartrain and Chicot, to the St. Mary's river, which is the place where the last-mentioned river, or rather channel, leaves the Mississippi. It then follows the course of the Mississippi to the great bend above the mouth of the Houma-chito river, about 31° 15' N. lat. Hence it crosses the Mississippi westward, and continues along the course of Red River to the neighbourhood of the rapids. At this place begins the western boundary of the delta, which follows the course of the Bayou Bonif to its union with Bayou Crocodile, and thence to the river breech to its outfall into the Atchafalaya branch of the river Mississippi. This river may be considered as the boundary-line, and afterwards the Atchafalaya to its mouth in Atchafalaya Bay. The whole country contained by these boundary-lines, and comprehending everything about or on the trace of the same, and occasionally to the same line, is, in fact, the land occupied by King Louis Philippe, but which are more ordi-

The Mississippi extends along the level with the sea at high tide. They are destitute of trees and shrubs, but covered with grass, which however is quite useless, as the swamps can only be traversed in boats by following the numerous watercourses which intersect them. Between the mouth of the river Mississippi toward the south-west and the mouth of the Bay of Atchafalaya toward the north-east, the Mississippi extends only about twenty miles inland, and terminate on the southern border of the elevated tract called Terre Bonne, the only part of the delta which exhibits any considerable extent of surface not subject to im-

The inundated region comprehends more than two-thirds of the delta. It may be divided into two parts, the
deeply inundated, and the less deeply inundated tract. All that part of the delta which is west of the Mississippi and of the Bayou la Fourche, with the exception of a tract west of Baton Rouge, is deeply inundated from February to August, during which period it forms an immense lake. Not even the banks of the Atchafalaya are free from inundation. The common depth of the water is six feet, but in many parts it extends to twelve feet. The Mississippi, however, is still more inundated, and it is much more. During the remainder of the year it is dry and the soil firm. The whole region is covered with high and valuable forest-trees, but no settlements have been formed in this country. It may be compared with the immense inundated plains on the southern banks of the Amazon river.

The country east of the Mississippi and of the Bayou la Fourche, as well as the tract of higher ground west of Baton Rouge, is only inundated to the depth of three or four feet, and the inundation is not so extensive. The Mississippi, however, is still more inundated, and it is much more. During the remainder of the year it is dry and the soil firm. The whole region is covered with high and valuable forest-trees, but no settlements have been formed in this country. It may be compared with the immense inundated plains on the southern banks of the Amazon river.

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accession of water from the right until it has attained 31° N. lat., where it is joined by the united waters of Red and Black rivers, which together probably drain a tract of 100,000 square miles, and bring down an immense body of water during the spring floods. At A and half a mile below the mouth of Red River the Mississippi sends off its first great branch, the Atchafalaya, which, flowing in a southern and south-eastern direction, traverses the lowest part of the delta, enters the south-eastern part of lake Choctawhatchee, and reaches to the verge of the lake Atchafalaya Bay, [ATCHAFALAYA.] Lake Choctawhatchee, or Grand Lake, is about 40 miles long and from two to five wide; at its southern extremity it is 40 feet deep. It is connected with the Atchafalaya by two channels, which traverse the intervening country, and divide it into many islands, making a kind of network.

From the Atchafalaya the Mississippi flows in a general south-eastern direction, but with many great bends. About 30° 30' N. lat., it is a mile and a half wide, and rises upwards of 320 miles south-east of the city of Natchez, the rich lands of its basin being the famous New Orleans, which is only six miles long, and joins the Atchafalaya. Though it has only water during the high flood, it is important for the internal navigation. Farther down occurs the last great efflux of the Mississippi, the La Fourche (the Fork), which branches between the Mississippi and the south, and the West Pass is nearly as deep as the East Pass. The other passes have from 5 to 8 feet of water, but they are rarely frequented. The depth of the water increases rapidly in the channels, so that a distance of 12 miles and sometimes 30 miles, with other channels and islands, is only 5 and even 6 feet. At this time the inundation ceases, and the decomposition of animal and vegetable matter infects the air, and produces dangerous diseases, especially fevers.

The mean temperature of the year at New Orleans, according to Darby, does not exceed 63°, or about 13° above that of London, which is 21 degrees nearer the pole. On the higher grounds, especially on the open prairies of Opelousas, the climate is much more severe. In 30° 30' N. lat. the summer is commonly very dry and hot, and sometimes rises to 40° and even 96°. At this time the inundation ceases, and the decomposition of animal and vegetable matter infects the air, and produces dangerous diseases, especially fevers.

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loist of oak, sweet-gum, poplar, tulip-tree, and hickory, of various species; the same trees occur on the broken country east of the Mississippi; the chinacapin grown on the borders of the inundated lands.

Innumerable herds of cattle are raised on the natural meadows and pastures, and Attakapas likewise horses and mules. The bison or buffalo is at present only met with towards the northern and western border, especially between the Sabine and Red River, where also wild horses are found. Deer is only plentiful in the prairies of Opelousas and in the Indian camps, the Bear, the Beaver, and beavers are rare, but wolves are numerous. Locusts infest the prairies, and numerous serpents the woods and lowlands. The alligator occurs in all the rivers, but is most numerous in the bay and lakes of stagnant water, where they also eggs, and are sometimes attacked and wounded. The Mississippi and its branches abound in fish. The forests swarm with birds, among which are the wild turkey, the parquet, the pelican, the flamingo, and the humming-bird. Swans, geese, and ducks are very numerous on the lakes and stagnant waters along Red River.

Clay occurs in the alluvial soil of the delta, at a depth of from ten to thirty feet along the Mississippi. There are salt springs in the northern districts, on the high grounds from the Mississippi to Sabine river, and several of them are turned to advantage. Coal exists in the same places, and iron-ore is found in the north-western corner, between the Sabine and Red River.

The descendants of European and African origin amounted in 1820 to 153,407 individuals, of whom 73,987 were whites, 10,476 free coloured persons, and 60,064 slaves. A considerable part of the population are the descendants of French settlers; and some newspapers were a few years ago, and probably still are, printed both in the French and English languages. According to the census of 1830 the number of free people was 106,130, and that of the slaves 109,630. The great increase of the slave population is to be ascribed to the increased cultivation of cotton in the United States.

The native tribes are not comprehended in this census; but their number probably does not exceed a thousand individuals. On the prairies are the Attakapas and Opielousas, but these tribes are far from being numerous; they have no fixed habitations, and live mostly from the produce of the chase. The Choctaws, on the Washita and Red River, are more numerous. They have adopted agriculture, and their villages are not much inferior to those of the other inhabitants; they chiefly cultivate Indian corn and the potato. The Toups, between Beaufort and Tennessus river, towards the northern boundary of Louisiana, are few in number.

Political Geography.—For political and civil purposes Louisiana is divided into thirty-one parishes. The present constitution and frame of government were adopted at Baton Rouge, on the Mississippi, situated at the eflux of the La Fourche branch from the Mississippi; it has much increased since the seat of government was removed to it. The largest town of Louisiana, and one of the most commercial towns of the United States, is New Orleans (Orleans, New or, on the left bank of the Mississippi, 106 miles above its mouth. All the other places are considerably smaller. Baton Rouge, on the Mississippi, contains only 1200 inhabitants; and Alexandria, on the Red River, has more than these. Natchez, on the left bank of the Mississippi, 2000 inhabitants; it is at the head of the steam-boat navigation on Red River, and the centre of the trade to Mexico.

The United States granted to Louisiana 46,000 acres of land for the support of a college, and 57,500 acres for the support of schools; the State annually appropriates about 40,000 dollars for the support of parish schools. The college of Louisiana, which has an annual allowance of 700 dollars from the state, is at Jackson; and a college has been established at New Orleans.

Commerce.—Besides the valuable produce of its own soil, the productions of all the states and settlements within the extensive basin of the Mississippi river which are destined for a foreign market must pass through this state, because there is no direct navigation by which they enter the sea within its boundaries. As to this commerce and navigation, it is

the

same.

The

intercommunication

between

the
dispersed settlements and New Orleans is entirely carried on by water, as there is no carriage-road in Louisiana, with the exception of that which runs along the Mississippi on the levee. Boats from 15 to 60 tons are conveyed from New Orleans by the Mississippian into the Atchafalaya. Those destined for the lower part of Attakapas descend the lower Mississippi by the Teche. Those bound to the central parts of Attakapas descend the Atchafalaya about 20 miles, and are then transported by an outlet and Lake Chetuncha to the Pausso Point landing. Here is a portage of 10 or 12 miles to St. Martinville, and from hence the Mississippi to Marais for Upper Attakapas. Vessels for the higher central parts of Opelousas ascend the Atchafalaya to the mouth of the Courtableau, and thence by the latter stream to Larrel's Landing, six miles, or into Bayou Carmouche, four miles, where the vitals of the enemy are attacked, and wounded. The settlements on the Lower Teche communicate with Donaldsonville and New Orleans by the lakes of Palourde and Verret, and by the inlets which connect these lakes with the Atchafalaya and La fourche branches of the Mississippi.

History.—The Mississippi river was discovered by La Salle, the Spaniards navigated the Gulf of Mexico for centuries without being aware that one of the largest rivers of the globe falls into it. This fact may be explained from the circumstance that a low, flat, and dangerous coast extends on both sides of its mouth to a great distance. The French, after their establishment in Canada, got some information as to this river about 1660, but did not find its mouth before 1699, when M. de I'Herbe founded the first settlement on the Lower Teche. Atchafalaya, at a time when the colony began to be of some importance. The French remained in possession of Louisiana up to 1762, when they ceded it to Spain. The colony was much neglected by the Spaniards, and improved very slowly, notwithstanding its numerous natural advantages. The Spanish government re-secured Louisiana to France, but the French government fearing that Louisiana would be taken from them, during the war that followed the peace of Amiens, by the superior naval force of England, sold it to the United States of America in 1803. The time of the sale the inhabitants were chiefly French and descendants of French, with a few Spanish creoles. Americans, English, and Germans: the whole population did not exceed 19,000 inhabitants, of whom about 14,000 were slaves.

Louisiana comprehended all the country included in the present state of Louisiana, with the exception of that tract which extends on the northern shores of the river Amur, and the lakes of Maurepas and Pontchartrain, and in a certain district on the west bank of the Mississippi river and the Rocky Mountains. The country was then divided into several territories, of which Louisiana re-rose to a state. In 1811 its population had increased to a number required by the federal constitution, and Louisiana was admitted on the 20th of December, 1812, into the Union. It was not, however, until 1845 that Louisiana was invested in a house of representatives and a senate. The members of both houses are elected by all free white citizens who have attained the age of twenty-one years. The senate consists of seventeen members, elected for six years; the number of representatives is at present fifty members, who are elected for two years. The executive power is vested in a governor. Louisiana sends three senators and three representatives to Congress.

At the time of the union of Louisiana with the United States, it was, as of the Roman law to some extent, in force. Some changes were immediately introduced for the purpose of bringing the condition of its inhabitants nearer to that of the other United States. Accordingly juries and the habeas corpus were introduced; but the negroes, who composed the great part of the population, were in force. Their defects were however so evident, that the legislature formed a new civil code, which was published in 1851. At the same time Mr. Edward Livingston was entrusted with the preparation of a new penal code, of which the draft was published in 1824, and the code itself was promulgated in 1833.
and dyed for the purpose, and which are sent all over Portugal, as well as artificial flowers and other similar articles.

The country is well watered, by walls and has a garden: its territory is very fertile and well watered, and produces corn, wine, oil, and fruits. A number of fine carob-trees grow in the neighbourhood. Loule has the title of a Marquisate, which is borne by the representative of a Portuguese family, allied to the marriage to the present royal dynasty. (Mifano; Link.)

LOURDES. [Pyrenees Superiors.]

LOUSE. [Pediculus.]

LOUTH, a maritime county of the province of Leinster in Ireland; bounded on the north by the county of Armagh and Bay of Carlingford, which separates it from the county of Down; on the east by the Irish Channel; on the south and south-west by the county of Meath; and on the west by the county of Monaghan. According to the Irish Ireland's superintendence of the Society for the Diffusion of Useful Knowledge it lies between 53° 54' and 54° 7' N. Lat., and between 6° 6' and 6° 41' W. long. According to the map of the Ordnance Survey of Ireland it extends from the Mattock river on the south to the Armaph boundary on the north, 26 statute miles; and from Dunany Point on the east to the Meath boundary on the west, 15 statute miles. From the sea at the bridge of Dundalk, however, to the Monaghan boundary, its breadth is only 6 miles. The surface. The area, according to the latter map, consists of

<table>
<thead>
<tr>
<th>Acres.</th>
<th>F. p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>202,336</td>
</tr>
<tr>
<td>Water</td>
<td>813</td>
</tr>
<tr>
<td>Total</td>
<td>203,149</td>
</tr>
</tbody>
</table>

or 17,174 square statute miles, being the smallest county in Ireland. In 1831 the gross population was 107,486.

From the Boyne to the river of Dundalk, comprising more than three-fourths of the county, the water is of the Boyne, which forms the great central plain of Ireland, of which it forms the northern-eastern portion. The only eminences in this division at all conspicuous are in the southern part of the county, which they cross in a direction nearly east and west, forming a considerable number of dunleavis in all directions. Next is the very hasty, although small town of Collo, adjoining the extensive demesne of Oriel Temple, the residence of Lord Ferrard. From Collo a low hilly range extends eastward, attaining its highest elevation in the hill Tuilley, 1,616 feet, and terminating in the promontory of Clogher-head, which rises 181 feet above the Irish Channel. The heights belonging to this range are cultivated to the top, and present no abrupt or striking outlines. Between them and the Boyne, except under the low-lying tract of the river, the features of interest. Near the coast, about midway between the Boyne and Clogher-head, is the village of Termonfockin, situated on a stream running eastward from Tuilleyser to the sea.

On the other side the Mattock river, rising between Tullyesker and Collo, runs southward by Mellowfint to the Boyne, forming the boundary between Louth and Meath. The northern slope of the hilly range above mentioned spreads into an open gently undulating plain, along which runs the track of the Dunleavis, entering the Bay of Carlingford, 416 feet, and terminating in the promontory of Clogher-head, which rises 181 feet above the Irish Channel. The heights belonging to this range are cultivated to the top, and present no abrupt or striking outlines. Between them and the Boyne, except under the low-lying tract of the river, the features of interest. Near the coast, about midway between the Boyne and Clogher-head, is the village of Termonfockin, situated on a stream running eastward from Tuilleyser to the sea.
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contracted to a narrow strip along the shore of Carlingford at 73,400 cwts., and at Castlebellingham 3500 cwts. The
Loch and valley of the Newry river hy the mountain-group wheat and barley of the above return are chiefly the proabove mentioned. The town of Carlingford, a place of con- duce of Louth and Monaghan ; the oats, of Cavan, Monasiderable antiquity and historical interest, stands at one ghan, and Fermanagh. The greater part of the oats proextremity of this tract, and the castle of Narrow-water at duced in Louth is used for home consumption.
The linen manufacture is carried on with some activity
the other. The latter however, being built on the opposite
side of the river of Newry, is in the county of Down. The at Ravensdale and Collon, where there are large bleachharbour of Carlingford is described under the article greens, but chiefly in Drogheda and its neighbourhood,
Down. The only other harbour, with the exception of a where the trade is generally very brisk. In Drogheda there
shallow creek at Anagassan, and a small fishing-pier at is a steam-power mill for spinning flax, which employ* 460
Clogher-head, is that of Dundalk. Clogher head is the spinners. The quantity of linen made in the town is 1500
only bold feature of the coast between Dundalk and the webs weekly, six-sevenths of which are manufactured
broad sandy beach, in some places from yarns spun in the town and neighbourhood, or im
mouth of the Boyne.
extending at low-water to a distance of two miles, skirts ported from Belfast, and the remainder of British yarns. The
The danger of number of persons employed in the linen manufacture in the
this part of the coast at every other point.
these great sandy shoals is however much diminished by county in 1831 was as follows : bleachers, 20 ; flax- dressers,
the prevalent direction of the wind, which for nine months 6 ; reed-makers, 2 ; weavers (including some woollen
weavers) 972. In the same year there were in the county
of the year is off shore.
Geology—The level portion of the county south of the 6 brewers, 7 maltsters, 30 tanners, 64 coopers, 14 cornpin manufactory
river of Dundalk belongs generally to the extensive clay- dealers, 60 millers, and ] 5 millwrights.
slate formation, which follows the northern margin of the was established at Drogheda, in 1836, by a Manchester house,
limestone plain from the Irish channel on the east to the who were unable to procure a sufficient number of hands at
The hands employed art
verge of the Upper Shannon on the west One considerable their English establishment.
patch of carboniferous limestone, skirted with a narrow children, who earn about 4#. per week. In 1838 there were
belt of yellow sandstone and conglomerate, is included 2G0 employed, and the proprietors were looking out for the
within the county boundary to the west of Ardee, and minor site of another establishment in a populous part of tht
deposits of the same rock occur in several other localities county. The fisheries off the coast give occasional employment to 13 decked fishing-boats, 11 half-decked ditto, one
through the west and north-west of the southern division
but the greatest extent of this formation within the county open sail ditto, and 313 open sail-boats, having an aggregate tonnage of 1765 tons, and manned by 1315 fishermen.
is in the district north of Dundalk, where the level space
There is a rather numerous resident gentry. The only
between the declivities of the mountains and the shore,
from the town of Carlingford to the bridge of Dundalk, and nobleman permanently resident is Lord Viscount Ferrard.
thenoe westward on both sides of the Castletown river to The Earl of Roden has a mansion and fine park adjoining
Dundalk, but is usually resident in the county of Down.
its junction with the Kilcurrv, is occupied by a limestone
formation, which, as it is surrounded on the landward side The other principal proprietors are Sir Patrick Belle w, Sir
by transition and primitive rocks, may probably be in con- Allan Belhngham, Sir Richard Robinson, and the families
nection with that part of the great central field which is of Fortescue, Balfour. Taaffe, Chester,
known to be overlaid by the waters of the Irish Channel
Divisions, Towns, $c Louth is divided into the baronies
farther south. The structure of the mountainous region is of Lower Dundalk* on the north-east, containing the town
similar to that of the group of Mourne, consisting of a nu- of Carlingford, population (in 1831) 1319 ; Upper Dundalk.
cleus of granite supporting the clay- slate and limestone of on the north-west, containing the town of Dundalk (pop. of
the surrounding field on its Hanks; the clay-slate near the borough and town 13,078); Louth* in the centre, containing
line of contact being altered, and passing into greenstone the town of Louth (pop. 613) ; Ardee on the south-west and
great protrusion of crystalline greenstone trap centre, containing the towns of Ardee (pop. 3975) and CasUeslate.
occurs at the eastern extremity of the range, constituting bellingham (pop. 611), and the village of Anagassan (pop.
the central mass of the mountains between the Big River 235) ; and Ferrara\ in the south, containing the towns of
On the northern declivities of these Collon (pop. 1153), Dunleer (pop. 710), and Clogher (pop.
and Carlingford.
Heights the clay-slate re-appears, skirting the southern shore 592), and the villages of Termonfeckin (pop. 470) and Balof the bay of Carlingford. Iron and lead ore are the only tray (pop. 428).
minerals which have been observed, but nowhere in suffiDundalk, the assize town of the county, has had various
charters of incorporation.
cient ouantityto warrant mining operations.
The governing charter bears
Sew, 4*.—The soil of the southern division of the county, date the 4th March, 1674. The corporation consists of a
although not so rich as that of the limestone plain of Meath, bailiff, 16 burgesses, and an indefinite number of freemen.
Wheat is The governing body is the corporation at large. The freeis well calculated for every kind of ^rain-crop.
grown in large quantities in the district round Ardee ; oats dom is acquired by special favour of the governing body.
and barley are the chief crops raised off the tillage lands of There is no criminal jurisdiction beyond that of a justice of
the rest of the southern district. The tract north of the the peace, which rank, for the borough, the bailiff and
bay of Dundalk, between the mountains and the sea, also recorder hold exofficio. The court of record is disused.
produces heavy wheat crops. Farming in general is carried The average revenue is 80/. per annum, and the expendion in a superior manner. Green crops are grown by almost ture 150/. The corporation in 1835 were 1 126/. 10*. in debt
The patron is the Eail of Roden, who is proprietor of almost
all the gentlemen farmers. The fences are usually of quickIn the mountain-district the entire site of the town. The present boundary of the
set, and the lands well drained.
the condition of the people is much inferior, and the im- borough comprises an area of 445 statute acres.
Prior to tho Union, Dundalk returned two members to the
proved system of husbandry unknown. Spade-cultivation
Irish parliament
It is now represented by one member in
is here very general, and the old slide car without wheels is
the
of
peasantry
appearance
the imperial parliament The right of election formerly ley
still in use. The dwellings and
the
which
northern
with the corporation. It \b now, by the 2nd Wm. lV„ c
inhabiting the dreary tract through
road passes before entering the defile of Ravensdale contrast 8M, vested in the resident freemen and 10/. householders.
strongly with the comfortable habitations and decent dresses The number of voters at the last general election was 376.
Dundalk is a place of a very remote antiquity, being the
of the rural population of Down. The condition of the peasantry throughout the southern district is however consider- Dundalgan of the Irish Ossianic poems, the resilience of the
ably better in all respects than in most of tho counties of hero Cuchullin. It is extremely probable that some earthen
The rate of wages for agricultural labourers and stone works in the neighbourhood of the present town
Leinster.
yaries from Sd. to \Qd. per day, for 210 working days in the formed a portion of the old cahir or city. The situation of
the place, on the lowest ford of the Castletown river, in the
^rear.
There is no regular return of the sales of grain in the direct road to Ulster, rendered it early a port of importance
The sales in Dundalk in 1B35 to the English. It was here O'Hanlon opposed the march
several market-towns.
of De Courcy northward in 1 179, on which occasion a great
242.100 cwts.
number o' •»•- '-*- 1* were drowned in the fords. The result
Wheat
of the f
377,074 *
HfuU but Dundalk remained in the
Barley
hands
146,037* „
"1m site and vicinity of the town
Oats
were
*n Bertram de Verdon* to whoa
owes ita origin,
The sale of oats at Arte in tho tame year » estimated prvU
Edward

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Bruce's invasion of Ireland in 1315, Dundalk was among the first places that fell into his hands, and here in the succeeding year he caused himself to be crowned King of Ireland. Bruce, after ravaging the south of Ireland with various fortunes, returned to the neighbourhood of Dundalk in the latter end of the year 1318. Here he was encountered at the Pbaugh, a height on the northern side of the Castletown river, by Lord John Beinningham. In this battle Bruce was slain, and his predatory army entirely defeated.

During the rebellion of Shane O'Neill, in the reign of Elizabeth, Dundalk was besieged by the insurgents, but without success. On the breaking out of the rebellion of 1641, Sir Phelim O'Neill took it without opposition, the garrison having surrendered on the first summons. On the 25th of March, 1642, Lord Moir and Sir Henry Tichbourne, after having driven the Irish from before Drogheda, and taken Ardee, advanced against Dundalk, but the resistance they carried by storm, having broken open the main gate with pickaxes. After the capture of Drogheda by Cromwell in 1649, Dundalk surrendered to the parliamentarians. In the war of the Revolution it was evacuated by the army of James II. on the advance of the army of King William, who took possession of it before he proceeded to the Boyne.

The main street of Dundalk is built along the line of the great northern road, and runs nearly north and south: the other principal streets run east and west from the market place. The principal street is about 500 yards long, and parallel to one another, occupying the extreme verge of the plain along the southern bank of the creek, where the Castletown river expands into the sea. At the northern extremity of the main street is the bridge, and south from it is the Market Place. On the left and opposite the market-place, is erected the Custom-house, a handsome edifice of cut-stone, and situated nearly in the middle of the main street. The county infirmary, a brick building in the Tudor style, stands at its southern extremity, and is surrounded by a strong gateway of oak.

An extensive cavalier barricade terminates the town eastward. The general appearance of Dundalk is highly respectable. The provision of the lights and paving act were put in force here in 1832. The amount of the assessment for lighting, paving, and watching for the year 1836 was 995. 6s. 11d.

The corn-trade is very extensively carried on. In the town are a steam-power mill for grinding wheat, a large distillery, and two breweries. Dundalk is the chief point of export for the counties of Cavan, Monaghan, and Fermanagh. The exports of agricultural produce in 1835 consisted of:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>142,097</td>
</tr>
<tr>
<td>Wheat, meal, and flour</td>
<td>16,280</td>
</tr>
<tr>
<td>Barley</td>
<td>56,280</td>
</tr>
<tr>
<td>Malt</td>
<td>53,825</td>
</tr>
<tr>
<td>Oats</td>
<td>55,547</td>
</tr>
<tr>
<td>Oatmeal</td>
<td>129,260</td>
</tr>
</tbody>
</table>

There is also a large export of butter and eggs, collected principally from the counties of Monaghan, Cavan, and the northern parts of Longford. The export of butter was about 550 tons for the season: the number of eggs exported in 1835 was 2,410,800; of yards of linen 60,000; of lbs. of wool 15,680; of heads of cows and oxen 3,932; of horses 100; of sheep 7,926; and of swine 46,169. Total exports for the year amounted to 107,933l., of which the chief items were for coal, culm, and cinders 19,024l.; cotton manufactures 13,500l.; woollen manufactures 10,500l.; haberdashery 6,500l.; iron 8960l.; fish (herring) 7,000l.; oak bark for tanners 4,800l.; sugars 2,100l.; and teas 1,400l. Two steam-vessels, each of 900 tons register, the property of a Dundalk company, ply regularly between the port and Liverpool. Since the establishment of these, there has been a considerable increase in the amount of imports.

The port, although it has not much depth of water, is considered a safe port that will be taken for it an English port at a less charge than for either of the ports of Newry or Drogheda. There are no harbour dues.

Dundalk is the head of an excise district, embracing Newry and Warrenpoint in the county of Down, Ardee in Louth, and the entire county of Monaghan. The amount of excise paid in the district in 1835 was 112,189l. 18s. 7d. The customs paid for the port of Dundalk, in the same year, amounted to 3598l. 5s. 7d. A branch of the bank of Ireland is established here.

Ardee is an antiquated corporation, at present governed by charter of the 25th of February, 1712. The corporation consists of a portmote, burgesses, and freemen. The governing body is the common-council. There is no criminal jurisdiction. The porc of the portmote, who is a justice of the peace or within the borough. The civil court of the recorder is now disused. It is asserted by the inhabitants that corporate estates to the value of 1000l. per annum have been apotted. The present income of the corporation is 124l. 6s. 11d.

Dunleer is incorporated by charter of the 3rd of August, 1678. The corporation is virtually extinct. The town itself is incosiderable.

Carlingford is an antiquated corporation, having been, during the existence of the English pale, a place of considerable importance, as commanding the only pass at that time practicable between Dundalk and Newry. The governing charter is dated 19th of August, 1619. The corporation is virtually extinct.

Prior to the Union, Louth returned two county members and two for each of the above boroughs. The representation is now limited to two county members, and one for Dundalk. The county constituency, at the end of 1836, consisted of 1194 voters. On the 1st of January, 1836, the police force of the county consisted of 4 chief constables, 22 constables, 107 subconstables, and 3 horse of the constabulary, supported at a cost of 512l. 13s. 5d., of which 2465l. 18s. 6d. was chargeable against the county; and of 70 registrars, 21 constables, 70 subconstables, and 2 horses of the peace-preservation police, the cost of which establishment was 4400l. 16s. 5d. In the same year the total number of persons charged with criminal offences who were committed to the county gaol was 321, of whom 192 were males and 129 females. Of these 127 males and 93 females could read and write at the time of their committal, 137 males and 20 females could read only, and 60 males and 9 females could neither read nor write. The assizes for the county are held at Dundalk, and general quarter-sessions at Dundalk, Drogheda (a county in itself), and Ardee, in which last place is a court-house and bridewell. The district lunatic asylum is at Dublin. This asylum was originally built in the year 1815, by parliamentary grant, for admission of 100 merchant lunatics throughout Ireland. It was created a district asylum by act of 11 Geo. IV., c. 22, and is now annexed to the district formed by the counties of Wicklow, Dublin, Meath, Louth, and the counties of the city of Dublin and of the town of Drogheda. The county of Monaghan at Dunleer is a present establishment. There are dispensaries in all the minor towns. There is no local newspaper.

**Population.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Houses</th>
<th>Families</th>
<th>Families chiefly employed in agriculture</th>
<th>Families chiefly employed in trade, manufactures, handicraft</th>
<th>Families not included in the preceding classes</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1792</td>
<td>11,545</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13,091</td>
</tr>
<tr>
<td>1821</td>
<td>18,138</td>
<td>19,891</td>
<td></td>
<td></td>
<td></td>
<td>49,063</td>
<td>57,648</td>
<td>106,711</td>
</tr>
<tr>
<td>1831</td>
<td>18,834</td>
<td>19,911</td>
<td></td>
<td></td>
<td></td>
<td>52,439</td>
<td>55,042</td>
<td>107,481</td>
</tr>
</tbody>
</table>

**P. C. No. 873.**

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Louth, at the coming of the English, formed a portion of the territory of Orgal or Oriol, by which name it afterwards came itself to be known in contradistinction to the more western parts of the same territory. The native family and chief authority in the territory at this time were the O’Kearvilles, or O’Carrols, and the MacMahons. Donnelagh O’Kearville, prince of Orgal, was the founder of several religious houses in the present county of Louth, about the middle of the twelfth century, among these was a Franciscan abbey called Mellifont, the consecration of which, in A.D. 1157, was attended by a great assembly of the Irish nobility. Among those who bestowed gifts on the new establishment on that occasion was Devorgilla, wife of O’Rourk, whose eloquence was by no means a little short to the English invaders. The eastern part of Orgal, constituting the present County Louth, having been conquered by De Courcy between 1179 and 1180, was erected into a county by King John, A.D. 1210. Being at the time accounted a portion of Ulster, it formed part of the grant to De Courcy, and was left time to De Lacy, by which it was divided among inferior barons. The families of De Verdon, Pippard, Thaffe, Bellew, and Gernon were among those introduced at this period. During the decay of the English authority, in the fourteenth and fifteenth centuries, it was ceded to the crown, and remained a royal demesne until the Act of Union. The preservation of the county from the general spirit of defection then that was in Ireland, was attended in a great measure, to the institution, by act of the 12th Edw. IV., of the Brotherhood of St. George, a military fraternity, for the protection of the gentry of the counties of Kildare, Dublin, Meath, and Louth, and having for its object the protection of the pale from the neighbouring Irish, and the arrest of outlaws and rebels within its jurisdiction. The present county of Louth, which was not considered a portion of Leinster until the reign of Elizabeth, is in great measure that of Drogheda and Dundalk. [Drogheda]. The forfeitures consequent on the rebellion of 1641 and the ensuing civil wars extended over nearly the entire county. Towards which followed the war of the Revolution of 1688 embraced 22,508 acres, of an estimated value, at that time, of 82,310/, £3.

The numerous antiquities which occur throughout Louth have been made the subject of a volume entitled “Louthiana; published at Dublin in 1748. But the monuments of this sort are very frequent occurrence. The most remarkable in the county is that of Castle-Guard at Ardee. Its perpendicular height is nearly 90 feet, the depth of the main trench about 30 and 40, the circumference at the top is 600 feet, and at the base upwards of 900 feet in circumference. The most remarkable are at Ballicreary and Ballinahatry, near Dundalk. At Ballymacaulley is a cromlech, the covering-stone of which measures 12 feet by 6, and weighs upwards of 2 tons. The avenue of stones leading from Louth and Drogheda, and two are still remaining at Droskins and Monasterboyce. The last is one of the finest specimens in the kingdom: it is 110 feet high, but has lost the greater part of its conical covering. In the churchyard near the tower stand two beautifully sculptured stone crosses. The larger, called St. Boyne’s Cross, is 18 feet high. On the base of the smaller, which is 16 feet in height, is an inscription, on which “Pray for Muredoch,” is legible in very ancient Irish characters. The arms of these crosses and the crosses at Broyle, and the wall surface of the churchyard is covered with rich tracery and allegorical sculpture. St. Boyne is probably a corruption of the name of St. Bua, the founder, who died A.D. 521. Muredoch, by whom the other crosses were originally set up, died A.D. 530. The ruins of the abbey of Mellifont occupy a beautiful situation near the Mattick river, near the Boyne. They consist of a gateway, part of a chapel, and the lower story of an octagonal chapter house. The ornamental part of the doors and windows are of black marble, and have been highly gilt. There are some very ancient ruins on the hill of Faghart, where Edward Bruce is said to be buried, connected with the old cell of St. Bridget. Of the various feudal buildings throughout the county the most remarkable are the castle of Ardsleigh, erected by King John, Rohie’s Castle, north-west of Dundalk, Torfchan or Ternonofckin Castle, a residence of the archbishops of Armagh, inhabited last by Primate Usher, and Castletown, still kept in habitable order, on the south bank of the Castletown river near Dundalk.

Louth lies partly in the diocese of Clonfert, but chiefly in that of Armagh, which extends into the counties of Armagh, Londonderry, Tyrone, Louth, and Meath. The number of parishes in this diocese is 98, constituting 66 benefices, and having 66 churches of the Establishment, 11 others under the Established Church, and 15 others under other Protestant Dissenters, and 309,447 Roman Catholics, being in the proportion of 3 Roman Catholics to 1 Protestant, of whatever denomination. In the same year there were in this diocese 623 daily schools, in which 4,909 young persons received instruction; but in the population of 80 per cent. of the entire population under daily tuition, in which respect Armagh stands fourteenth among the 32 dioceses of Ireland. Of the above schools, in 1834, there were sixty-seven in connection with the National Board of Education, and 256 under other establishments.

The county expenses are disbursed by grand jury presents. The amount levied for the year 1835 was 11,247l. 2s. 6d., of which 27,492. 14s. 7d. was for roads and bridges, 4509l. 6s. 6d. for buildings, salaries, charities, &c., and 44,690l. 19s. 4d. for other purposes. (Wright’s Louthiana; Report of the Railway Commissioners for Ireland; Cox’s History of Ireland; Parliamentary Reports and Papers, &c.)

LOUTHBERG, PHILIP JAMES DE, a distinguished landscape painter, born at Strasbourg, October 17, 1740, was the son of a miniature painter who died in 1768. He at first studied under Tischbein, afterwards under Casanova, to whom for a time he was under great vogue. While his own peculiar forte was landscape, he was enabled by his education to give to that branch of the art a greater compass and range of subject than usual, as in his various battle and hunting pieces, and his celebrated pictures of landscape scenery, in which he is unequalled in the world. His art was of the same kind as that of the landscape painters of the eighteenth century, who were then in great vogue. His works are still considered by great voyage and mastery of pencil, and by excellent management in regard to composition. Having received a good education in painting, he exhibited at the Louvre, and having been admitted a member of the Academy there in 1769, Louthberg came over to England (where he afterwards elected a royal academian) in 1771, and was engaged as a painter of landscape scenery, and for decoration, his poetic imagination, and his perfect knowledge of every effect, well qualified him for a department of art which demands a high degree of skill, and is required to be a subordinate to the other branches of design. He became to a large extent during his residence in England a celebrated personage, and his name was universally known and frequently heard of. After his settlement in this country Louthberg got up, under the name of the Fieldhouse, a novel and highly ingenious exhibition, displaying the changes of the elements and their phenomena, in a calm moonlight, and a sunset and a storm at sea. Of this was an interesting pictorial contrivance, which may be said to have anticipated, but in some respects to have surpassed our present dioramas, although upon a small scale, a tolerably full account is given in Pyne’s ‘Miscellaneous’ and of this in Pocock’s ‘History of the Stage’.

Louthberg etched several of his own compositions. He died at his residence at Hammersmith-terrace, March 11, 1812.

LOUAIR (the French name of Louvain), a very ancient town of South Brabant, in 50° 53' N. lat. and 4° 39' E. long. It stands on the Dyle, 16 miles east from Brussels, and about the same distance south-east from Mechlin, or Malines, on the north-west from Tirlemont. The system of railroads from Ostend, Bruges, Ghent, Antwerp, and Brussels, which pass through Louvain, are transferred from Liège, and will be further continued through Aix-la-Chapelle to Cologne, and eventually to Bonn, where its further progress will be impeded by natural difficulties. Louvain was the largest, richest, and the most commercial city
the country. Its principal trade consisted in woollen manufactures, which are said to have been carried on in very considerable extent at the beginning of the fourteenth century as to give employment to 150,000 workmen; but this number appears to be exaggerated. The weavers, in 1382, revolted against the duke of Brabant, and for a time desolated the province, but were speedily suppressed by the king. The greater part of them came to England, where they introduced the manufacture of broad-cloth. The walls of Louvain are nearly seven miles in circumference; but a great part of the space enclosed is no longer occupied by the town, which has been succeeded by gardens and vineyards. The population is now about 27,000, or only one-sixth of what it was 500 years ago.

The manufacture of woollens and lace is now carried on in Louvain to a small extent. There are several breweries in the town, and the beer is considered as an especial favourite, and has a great sale in other parts of Belgium. There is also a trade to some extent in agricultural produce.

The university of Louvain was established in 1428 by John, the fourth duke of Brabant, and long enjoyed a high character, which it sustained. The building was in part converted into a hospital, but was restored in 1817, and is again a flourishing institution with 60 professors and 500 students; it has a botanical garden and zoological and mineralogical museums. The chief Gothic building, erected in 1440, contains some good paintings. The church of St. Peter is one of the finest religious edifices in Belgium; the tower, which fell down in 1664, is said to have been 333 feet high. The town is in general noted for its great churches and churches.

EVREUX, in France, is situated in the department of Eure, is on the river Eure, and on the road from Evreux to Rouen, 12 miles from Evreux and 17 from Rouen. This town was anciently fortified. In the wars of the fourteenth century the townsmen embraced the party of the Louvain, and afforded an asylum to the parliament of Rouen, when driven out of the city by the Protestants; but they submitted to Henri IV. after the battle of Ivry. The town is handsomely built, and situated in a fertile plain; it has about 6,500 inhabitants, and is an important market town. It is the seat of a bishopric, and has a college of canons. There are some considerable establishments for making the machinery employed in the various factories and mills. There are a subordinate court of justice, several government offices, a public library, and a theatre. There are four yearly fairs. The fine cloths are exported, and are esteemed as superior to those of any other town in France; they are shipped from Spain. The arrangement of Louvain contains 302 square miles, and is divided into five cantons and 118 communes. It had a population of 68,942 in 1831; and of 69,402 in 1836.

LOUVRE. [PARIS.]

LOVE-APPLE, a fruit-bearing annual, also called Tomato, is the Solanum Lycopersicum of botanists, a plant much cultivated for the sake of its berries, from which are obtained various preparations used for culinary purposes. It is a native of Peru and Brazil, whence it has been carried into North America and the Old World; and it has become, as it were, naturalized in some parts of India. The common love-apple has depressed round lobed irregular berries, varying in size in some, some being round, others angular. They are of a deep yellow to red, and when raw they have a singular flavour, not unlike that of cooked meat, but they are never brought to table except stewed or in the form of sauce. The only directions for the cultivation of the Tomato which it is necessary for the reader to note are, first, that it is an annual, and when planted out have a southern bank or wall, or some trellises, over which the branches may be disposed. In this climate the summers are too short to ripen the fruit unless assisted by reflected heat. Many varieties of this plant have been described, but they principally differ in the form, colour, and size of their fruit. They all are in varietal with the usual character of the genus Solanum, in having a fruit with an irregular number and arrangement of its cells, on which account they have been collected by Dunal into a particular genus, to which he gives the name of Lycopersicum, distinguishing eleven species, and calling the common garden love-apple L. esculentum.

LOW COUNTRIES, or NETHERLANDS, a district in Europe, bounded by the Rhine and Meuse on the west, by the North Sea on the south, and by the kingdoms of Holland and Belgium, and grand-duchy of Luxemburg. It is bounded on the east by the Rhenish provinces of Prussia and the kingdom of Hanover, in the north, by the North Sea, and on the south by the kingdom of France.

LOWER GREEN-SAND. [CRETACEOUS GROUP.]

LOWTH, WILLIAM, born 1661, died 1732, the elder of two divines of the Church of England, father and son, both of whom are distinguished for their literary works, and by their useful publications. The elder is the less celebrated, though he is supposed to have been the profounder scholar; but he lived less in the public eye, and attained to none of the dignities which were bestowed on the son. He was a profane and curious lawyer. The son was a learned and admirable scholar, and an inquirer into minute and curious literature. To both these distinguished men some valuable notes of his own writings, which are now most read are his Directions for the Profitable Reading the Holy Scriptures, which was first published in 1766, and has been often reprinted, and his Commentary on the four greater Prophets. This last-named work usually accompanies Bishop Patrick’s Commentary on the other books of Scripture, to which it was prepared as a supplement.

LOWTH, ROBERT, born 1710, died 1787, a prelate of the English Church, son of the Lowth last named, and, like his father, distinguished by his knowledge of the books of Scripture and his valuable writings in the illustration of them. He was also an elegant scholar, and an inquirer into minute and curious literature. To both these distinguished men some few poems of his, chiefly in the nature of academical exercises, which in their day were greatly admired.

He was educated in the school of Winchester founded by William of Wickham, from whence he passed to New College, Oxford, where he was elected fellow of All Souls. He was afterwards made a prelate. He went abroad with members of the Dartmouth, and the Devonshire families, who, especially the latter, favoured his advancement in the church; and having the good fortune to secure also the patronage of Axon, bishop of Winchester, his appointment to the bishoprick of Durham, and his elevation to the bishoprick of London, and in a situation to decline the offer which was made to him by King George III. of the archbishopric of Canterbury. A few days of his prelatements may suffice. Early in life he had the rectorate of Ovington; in 1720 he was made an the Rector of East-Woolshay in that diocese; in 1726 he became bishop of St. David’s; in the same year he was translated to Oxford; and in 1777 was made bishop of London.

In speaking of the writings with which Bishop Lowth has enriched the world, it is easy to pass over his minor tracts, even those which belong to his controversy with Bishop Warburton, arising out of a trifling difference of opinion respecting the Book of Job. This controversy was carried on both in print and out of print; its facts are rarely witnessed in these days in the disputes of literary men, and the pamphlets may be recommended to any one who can relish angry disputations seasoned by learning and wit. Writings on which we can dwell with greater satisfaction are his Life of Duns Scotus, published in 1758, an admirable specimen of the results to be attained by curious and recondite biographical research; and his Lectures on the Poetry of the Hebrews, which were delivered by him in the University when he was professor of poetry. These lectures bore fruit, and a book was compiled under the subject, little attention having been previously paid to the laws of Hebrew poetry, or even to the fact that large proportions of the books of the Old Testament are poems, in the
strict and proper sense of the word, though presented to the
English reader in a mere prose version, and as if there was
no difference between them and the parts of those
sections translated into English, they were received, when
published, with great respect by the learned, not of England
only, but of the Continent, where they were reprinted, with
a large body of valuable notes by the learned biblical
scholar J. D. Michaelis. These lectures were published by Loxta
and in 1728, the year after he was promoted to the
bishopric of London, he published a "Translation of the
Prophet Isaiah," distinguishing the theological from the
paraphrase contains an enumeration of the various forms of
Hebrew parallelisms which occur in that prophet, and
which he had explained and illustrated in his lectures. He
gave a large body of valuable notes. These were his
greater works, but he published also an Introduction to
English Grammar, which was thought valuable at the
time, and was often reprinted, but is now superseded
and forgotten.

A volume containing memoirs of his life and writings
was published soon after his death.

LOX., a town in Spain, in the province of
Granada, 30 miles west of Granada and 40 north-east of
the city, at the base of a hill of hills and in a valley
watered by the river Genil. It has manufactures of printed
cotton and paper, three parish churches containing
13,000 inhabitants. The territory is fertile and
wealthy, and produces corn, maize, pulse, oil, and
abounds in oaks, chestnuts, and olive-trees. (Mi
tano.)

LOXIDE, Mr. Vigors's name for a family of birds
plumage an extreme of the tribe of Conirostres,
which is the third tribe of his Ineisseros, or perching birds,
and intervenes between the Dentirostro and Scansorial
tribes in his system.

Mr. Vigors remarks, that notwithstanding their inferiority of
some species of the family may be observed to
the Hornibill, allowance making it for their
relative proportions, in the extreme enlargement of the bill.
'The curved and serrated bill of the latter family' (Hor
bilis), says Mr. Vigors, 'partly when viewed alone, as
we have no data for a comparison, has the resemblance to
the Hyptotonidae, which is still carried on to a
right corresponding group in the present,
Phytotoma, Gen, where these characters are preserved, though the curve is
sharper and the serration less strong. United to that genus
by some intermediate and uncharacterised species, the Co
coracos. R, conducts us to several groups, among
which Ptilis, Cuv, Strophicapha, Vieill., the true Loxa
of authors, and Ptilostris, Temm., may be distinguished;
from whence we pass to the shorter-billed groups, among
Cocorodes, Lin., and Casiotes, which are placed together:
These are but few of the natural genera which
abound in this extensive family. Many intervening species,
possessing strong genuine distinctions, may be introduced among
these groups, which at length terminate in some of the
curiously different groups of the I. Tanege.
These, it will be remembered, commenced the
present tribe (Conirostres) by their union with the Fringilide; and thus also the circular succession of affinities
extends uninterrupted through the whole subm prohibited.' (Natural Affinities that connect the Orders and Families
of Birds, Linn, Trans, vol. xiv.)

Mr. Swainson (Classification of Birds) appears to reject the
family altogether; for he finds Phytotoma among the
Phytophagae, a subfamily of Musophagina, under
the family of the subfamily Coccotrochunus; Ptilis under the
subfamily Tangerine; Strophicapha under the 'Generic
names not adopted,' Loxa, and Ptilostris in the
subfamily Tetraleontina, Colius in the subfamily Colinae
family Musophagae, Loxa under the 'Generic
names not adopted,' Tangerine, and Tanege under the
subfamily Tangerine; the subfamily, with the exception of the two placed under the Muso
phagidae, being arranged under the family Fringilidae.
Mr. Swainson's Conirostres (his second tribe of Ineissaes)
consists of the families Corvells, Stermidae, Fringilidae,
Musophagidae, with their subfamilies, and Buceridae.

Having given the reader a sketch of the views of the
ornithologists above quoted, we shall confine ourselves
in this article to Brison's genus Loxa only, of which M. Ten
manick remarks that its characters extend to all other species,
being proper to the Crossbills only. Illiger, he observes,
in his Prodromus also of this opinion.

**Generic Character.**—Bill moderate, strong, very much
compressed; the mandibles equally curved, hooked,
and the elongated points crossing each other, and the hairs directed
towards. Feet with three toes before and one behind, anterior
toes divided. Wings moderate, the first quill longest. Tail
forked.

Mr. Temminck, who gives the above generic character,
for 2 species, Loxa Pygmiatopsius and L. curvirostra,
in his second edition (1820), and L. leucogaster, in his third
part of that edition (1835). The same three species, the first
under the name of L. pinetorum, are recorded by Mr.
Swainson.

**Geographical Distribution of the Genus.**—The north
both of Europe and America. One species however, L. curvirostra, is found in Japan as well as in Europe.

**Example.** L. curvirostra, the common Crossbill.

Before we go into the history of this species, it will be well to call the reader's attention to the curious organization
of the bill in this genus. Buffon, who, as we have too
often been obliged to repeat, frequently saw deformity
where all was harmony and symmetrical adaptation, des
noted the opportunity of making a remarkable discovery that
is clearly understood. He speaks of the bill in these b
as an error and defect in nature—a deformity. If he had
ever kept these birds in a cage, he would soon have found
that no instrument could have been better adapted to the
work, Laënnec, in his work on the ear; and the
Richards he would have been convinced to its cost of its
efficacy in splitting fruits for the purpose of getting at the
kernels.

Mr. Yarrell has well illustrated the structure and working
power of the organ, which, conjointed with the peculiar
tongue, will be found a most perfect and beautiful piece of
mechanism for attaining the end in view.

'The beak of the Crossbill,' writes the author last men
tioned, 'is altogether unique in its form; the mandibles
are not like those of any other with the
intercept, as in other birds, but curve to the right and left,
and always in opposite directions to each other.
In some speci
mens the upper mandible is turned to the right, the lower
mandible curved to the left; in others, the position of the
mandibles is reversed as to their direction. In the spec
imen I examined the upper mandible curved downwards
to the left, the under portion turned upwards and to the
right. When holding the head of this bird in my fingers.
I found I could bring the point of the upper mandible under
the beak and touching the side of the upper, but
not beyond it towards the left side; while on its own a
point passed with ease to the distance of 3-8ths of an
inch. The upper mandible has a limited degree of motion
on the cranium, the upper mandible being the strongest and
touching the frontal by flexible bony laminae.'

Mr. Yarrell then proceeds to the details of the anatomy,
which he illustrates by the seven figures copied below. He
first notices the peculiarity of the form, as well as of the
magnitude of the processes of some of the bones of the
head in this bird, and points out that the pterygoid processes
of the palatal bones are considerably elongated downward
(fig 3, o) to afford space for the insertion of the large
dentary muscles. The os osmoideum (fig 3, b) is strongly
armed with three quill quadratum (fig 3, c, d) a bridge formed in the
support to the movable portion of the upper
maxillary bone. The jugal bone (figs 3, d, d) is united to the superior maxillary
bone in front, and firmly attached by its posterior extremity
to the outer side of the os quadratum. Thus, when the os
quadratum is pulled upwards and forwards by its own
principle...

* Buffon, after noticing the deformity, remarks that it is "cette espèce de
déformité qui seule distingue est crieuse du croco;" he added, "c'est une
epithète qu'on n'attribue qu'à des oiseaux qui n'ont que des caractères ou
plutôt de ces déformités; et que la plupart des oiseaux sont..."  "Mr. Tem
minck says that it is an error and defect in nature—a deformity. If he
had ever kept these birds in a cage, he would soon have found
that no instrument could have been better adapted to the
work, Laënnec, in his work on the ear; and the
Richards he would have been convinced of its
efficacy in splitting fruits for the purpose of getting at the
kernels.

**Loxa curvirostra,**
per muscles, the upper mandible is elevated by the forward pressure of that bone.

The lower jaw is the anterior projecting process of the os quadratum, to which the lower jaw is articulated, is somewhat linear from before backwards, and compressed at the sides, permitting vertical motion only upwards and downwards; but in the crossbill these processes are spherical (figs. 6, 7, b), and the cavity in the lower jaw destined to receive the process is a circular cup (fig. 5, a): from the union of these two portions there results an articulation with all the motion and flexibility of the mechanical ball and socket joint.

The lower jaw is very strong and the sides or plates are elevated; the coronoid processes (fig. 5, b, b) are prominent, and to these, as well as to the whole outer side of the plates, the temporal muscle is attached. In a head of this bird which had been dissected of all the soft parts, Mr. Yarrell found that the temporal muscle is inserted laterally on the side of the temporal bone, and that as performed by the bird, before the coronoid process is brought into contact with the pterygoid process on its own side, the extreme points of the mandibles were separated laterally to the extent above mentioned (3-8ths of an inch). There are very small muscles (figs. 2, c, c) on each side were unusually large, the great distance to which the articulated extremities of the lower jaw were removed affording ample space for them, and as the food of the bird consists of small seeds, a narrow pharynx is sufficient for the purposes of deglutition.

For depressing the lower mandible three muscles are called into action; but only one of these, the great pyramidal (figs. 1, 2, 4, 6, a, b), indicating by their bulk the great lateral power which the bird is capable of exerting. The pterygoid muscles (figs. 2, a) on each side were unusually large, the great distance to which the articulated extremities of the lower jaw were removed affording ample space for them, and as the food of the bird consists of small seeds, a narrow pharynx is sufficient for the purposes of deglutition. For depressing the lower mandible three muscles are called into action; but only one of these, the great pyramidal (figs. 1, 2, 4, 6, a, b), indicating by their bulk the great lateral power which the bird is capable of exerting. The pterygoid muscles (figs. 2, a) on each side were unusually large, the great distance to which the articulated extremities of the lower jaw were removed affording ample space for them, and as the food of the bird consists of small seeds, a narrow pharynx is sufficient for the purpose of deglutition.

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Thus the depressors of the lower jaw, and the elevators of the upper jaw, act together to separate the mandibles. To close them, the temporal and pterygoid muscles elevate the lower jaw, assisted by the slender slips (figs. 2, c) which, extending forwards to the superior maxillary bones, act in concert by bringing them down. To work the lateral motion, the great pyramidal muscle on the right side pulls the extremity of the lower jaw, to which it is attached, backwards, the pterygoid muscles of the left side at the same time powerfully assisting by carrying that side of the lower jaw inwards.

Mr. Yarrell then quotes Mr. Townsend, to show the adaptation of these parts to the wants of the bird in feeding. The great pine-forests, such as the Hartz in Germany, says Mr. Townsend, are the natural places of residence of the Crossbills, and the seed of the cones of these trees their food; and it is to pull out the seeds from between the scales, or scales of the cones, that this structure is given to them. Their mode of operation is thus:—they first fix themselves across the cone, then bring the points of the maxillae, from their crossed or lateral position, to be immediately over each other. In this reduced compass they comminute their seeds between the scales, and then opening them, not in the usual manner, but by drawing the inferior maxilla sideways, force open the scales or spines. It is at this stage of the proceeding observes Mr. Yarrell, that the protractor of the tongue becomes necessary; and hence we have another instance of beautiful adaptation. There is articulated to the anterior extremity of the os hyoidei, or

bone of the tongue, an additional portion, formed partly of bone, with a horny covering (figs. 6, 7, a). This is narrow, and about g. a. in. in length, extending forwards and downwards with the sides curved upwards, and the distal extremity shaped like a scoop somewhat pointed and thin on both edges, the proximal extremity ending in two small processes elongated upwards and backwards above the articulation with the bone of the tongue, each process having inserted upon it a slender muscle (figs. 6, 7, b) extending backwards to the glottis and attached to the os hyoidei; and these muscles, by their contraction, extend and raise the scoop-like point. Underneath the articulation of this horny grooved appendage, continues Mr. Yarrell, is another small muscle (fig. 7), which is attached at one extremity to the os hyoidei, at the other to the moveable piece, and by its action, as an antagonist to the upper muscles, bends the points downwards and backwards; whilst therefore the points of the beak press the shell from the body of the cone, the tongue, brought forward by its own muscle (genio-hyoideus) is enabled, by the additional muscles described, to direct and insert its cutting scope beneath the seed, and the food thus dislodged is transferred to the mouth: it will be seen by a reference to the first figure, that when the mandibles are separated laterally in this operation, the bird has an uninterrupted view of the seed in the cavity.
with the eye on that side to which the under mandible is curved. So much for Buffon's 'error of defect of nature, and deformity.'

Description of Lox curvicestra.—Adult and Old Male.—Principal colours of the plumage ash strongly tinged with greenish; face, crown, and eye-whites, with yellowish and whitish spots; back, small covert feathers of the wings, and scapulars, greenish; rump yellow; lower parts yellowish-green; abdomen grey, with deeper green; wing and tail-feathers blackish, bordered with, occasioned white, the greater covert feathers bordered with yellowish-white; iris and feet brown; bill horn-colour. Length, about 6 inches.

Mule from its first moult to the age of one year.—All the upper and lower parts of the body brick-red, more or less tinged with greenish; feathers of the tail red, bordered with red-green; covert feathers of the tail white, with a great brown spot in the centre.

Young of the year.—Upper parts grey-brown, clouded with greenish; rump yellowish; lower parts whitish, with longitudinal streaks of brown.

In all ages, differing but little from the young; the plumage is clouded with greenish and yellowish tints. Neither in this species nor in L. Pytophagreus does the female ever assume the red livery, which is only peculiar to the male, and first moult under age of one year.

Such is Temminck's description in the second edition of his 'Manuel' (1829), but in the third part (1835), he states that the principal tints under which the male presents itself are more or less of a brick or vermillion-red, the main tints being white, black, and grey; old are of a tarnished red, of a yellowish-green, or a tawny yellow clouded with reddish. The old females have the upper part of the body deep grey, the rump of a yellowish-green, the lower part of the body bright yellow-clouded with greenish. Temminck adds that he saw males with the summit of the head, belly, and rump of a beautiful yellow, with a large brown band behind the eyes, and the rest of the plumage like the old females, but with the head, neck, and part of the upper tints generally, that the red or reddish livery of the males is not, as had been erroneously believed, peculiar to a limited period of life, but is the perfect state of plumage in the male sex; after quoting M. Brown's proofs of the different age, he states that the old males have a red plumage; the young a reddish plumage, reddish-yellow, or yellowish; the females a yellowish-green, and the young a grey or greyish plumage.

Mr. Gould (Birds of Europe) observes that in the minds of some doubts are entertained, and that they existed till lately in his own, as to whether the rich rose-red colouring assumed by this bird is characteristic of the breeding season, or the permanent livery of the adult male. He states that during his recent visit to Vienna he had an opportunity of seeing, during both spring and autumn, several of these birds; the first having been of the races, the second and third in the form of the white races. He states that the reddish plumage is acquired during the first autumn, for he saw many which had their plumage thickly spotted with red, although before the season was over they had already assumed the red colouring; and others that had their feathers entirely tinted of this colour; while the adults, as most ornithologists have stated, are characterised by a plumage of olive-green, which appears to be permanent.

This bird is Lox curvicestra of Linnaeus; Heer in crece, Crotone and Crotore of the Italians; Bec croce, Bec croise and Bec croise commun of the French; Flechten Kreuzschwanz or Kruezschwanz and Mittlerer Gehrgen and Flechten Kreuzschwanz of the Germans, Kreuzen of the Nether-lands, Temminck of the Dutch, and of the Ceylonese. Scops of the Germans, Common Crossbill, or Shell-Apple of the modern British; and Gyffingcrove of the antient British.

Habits, Reproduction, &c.—Willoughby, who notices its change of colours, says that it is a most voracious bird; much given to any fruit in season, and feeds very much on insects, also, he adds, 'loves fire-kernels. ... They say, that with one stroke of its bill it will in a trice divide an apple in halves, that it may feed upon the kernels, by that means doing a great deal of mischief in orchards.' Mr. Townsend, who kept some, states that the degree of the winter power of these birds is surprising, that they are fond of exercising it for mere amusement, and are therefore not a little mischievous. 'My pets,' says the last-mentioned author, 'would often come to my table whilst I was writing, and carry off my penks, little chip-boxes in which I occasionally kept insects, and other similar objects, and tear these pieces in a minute. Their mode of operation is by speckling a little hole; in this they insert their bill, and split or tear the object by the lateral force. When I treated them, as I often did, with almonds in their shells, they first pecking a hole in the shell, and then enlarging it by wrenching off pieces to the lateral power.'

Mr. Harrel, who, in his paper in the Zoological Journal, from which we have taken the above quotation, declares that the birds are 'not at all obtrusive,' and that they can pick up and eat the smallest seeds, and shell or husk hemp and similar seeds, gives the following interesting account of the habits of the pair in captivity. We must premise that Willoughby states that 'the males are very much attached to the females, and that the sides with their bills and feet, after the manner of parrots. 'My friend Mr. Morgan,' says Mr. Harrel, 'kept a pair of these birds for some time, and had opportunities of observing their curious habits. They were remarkably tame, and on an occasional visit to their cage, by the use of their beaks and claws, like parrots. One of their principal occupations was twisting out the wires of their prison, which they accomplished with equal ease and dexterity. A short flat head, crown, and neck. The male is distinguished by the length of the tail, on which they tried their strength; and the male, who was usually pioneer in every new exploit, succeeded by continued efforts in drawing the nail out of the way, though not without breaking off the point of his beak in the attempt. He was also the first of the pair to measure the length brought upon them sentence of banishment. During the period of their captivity a complete change took place in the colour of their plumage, without the shedding of any part of the body.'

The nest is generally placed in the fork of a lofty branch in fir and other trees; it is built of moss, lichens, and other such materials, and lined with feathers. Eggs four or five greyish or dirty white, with irregular bright blood-red spots, bordered with a yellowish tinge; smaller spots, and no more, over the remaining portions. Temminck says that Livonia it builds in the month of May, but the genus period of nidification mentioned by authors is during winter or very early in spring. Whist they are at rest, they are very vocal and musical in their tones or croaks; and when seen climbing about the branches like Parrots; but it is said besides to have a pleasant song, which is poured forth in the winter months, or at the season of incubation.

Mr. Sharp declares that the nidification and laying of eggs takes place in all seasons, and he attributes this partiality to the comparative abundance or scarcity of food. It appears to be certain that Crossbills make their nest December, as well as in March, April, and May. Formerly they were very common in America and Japan, in which last locality it is called Isga. The Prince of Musignano (C. Bonaparte) notes it as very accidental, appearing only in the coldest winters at Rome; but as not rare in Philadelphia in the winter 1800. They are occasionally seen in the British Islands. Willoughby says, 'Sometimes they come over to us, and in the western part of England, especially in Worcestershire, make bad work, spoiling a great deal of fruit in some orchards. About the commencement of the present century a large flight of birds is found in the South of England in the autumn, and did much damage to the apples. The numbers of these birds were taken and kept in cages at that time. Mr. Selby notices the immense flocks that appeared to be now and then in the woods and other places, and that they were seen in all woods and plantations where the fir-tree abounds. Their first appearance was in the early part of June, and the greater part of the flocks seemed to move in lines, which was a peculiar circumstance in the birds, and very unusual in any other禽类.'

* Buffon's words are: 'Les deux paires de piques ou percet, se sont peut-être formées, pour servir à l'usage des bords et des branches, où elles se nourrissent.'
the end of that year). Many of the females killed by Mr. Selby showed plainly, from the dunedin state of their breasts, that they had been engaged in incubation some time previous to their arrival; which circumstances, he observes, agrees with the account given of the early period at which they breed in higher latitudes. They continued in Britain till towards the autumn, but kept moving northward, for Mr. Selby found them in September particularly abundant in all the tracts of Scotland after they had nearly disappeared south of the Tweed. Since that time (the writes in 1825) none had come under his observation. He alludes to the great havoc they commit in the apple and pear orchards in their occasional visits to the south, by splitting the fruit in halves for the sake of the enclosed pips. Mr. Hoy, of Stoke Nayland, in Suffolk, who gives an interesting account of the habits of these birds, says that from 1821 to the middle of May, 1822, Crossbills were very numerous in that county, and, he believes, extended their flights into many parts of England. (London's Magazine of Nat. Hist., January, 1834.) Mr. Knapp notices its occasional visits in small parties, and the damage it does to the orchard. He says that a pair was brought to him very early in August, and the breast of the female being nearly bare of feathers, as is observed in sitting birds, he thinks it is probable that she had a nest in the neighbourhood. There are a few instances recorded of its breeding here.

Utility to Man.—The flesh of the Common Crossbill is well flavoured. Mr. Gould saw in the bird-market of Vienna multitudes of Crossbills exposed for sale with swallows, martins, and many others of the smaller birds, for the purposes of the table; of these the Crossbill appeared to be especially in request from its superiority of size and its sweet and well-flavoured flesh, to the good qualities of which Mr. Gould bears testimony. The same author notices it as seeming to be of all the small birds the least distrustful of man, and states that when flocks arrive in this country numbers are taken by a bird-lined twig attached to the end of a fishing-rod.

Loxia curvirostra, male: upper figure, young of the year; lower, adult.

LOXODROMIC SPIRAL ( disgust, oblique, ῥόμαιος, course), the curve on which a ship sails when her course is always on one point of the compass. It is called in English works the RHUMB LINE.

LOYOLA. [JESUITS.]

LOZERE, a department in the south of France, bounded on the north-east by the department of Haute-Loire, on the east by that of Ardeche, on the southeast and south by that of Gard, on the southwest and west by that of Aveyron, and on the north-west by that of Cantal. The form of the department is nearly oval; its greatest length is about 77 miles, and its breadth is about 37 miles.

The area of the department may be estimated at 1892 square miles, being considerably under the average size of the French departments, and rather less than the English county of Norfolk. The population in 1831 was 140,347; in 1836 it was 141,733, showing an increase of 1482, or 1.03 per cent., in 1836, or less than one per cent, and giving 71 inhabitants to a square mile, less than one-half the average density of population in France, and about equal to the density of population in Westmorland, the most thinly peopled of the English counties. The capital is in 4 x 31' 15" lat. and 3° 29' E. long., 302 miles in a direct line south by east of Paris, or 335 miles by the road through Montargis, Nevers, Moulins, Clermont, and St. Flour.

This department is altogether of a montagnous character. The Cevennes cross it in the south-western part; Mont Lozère, one of the loftiest mountains of this range, is 4898 feet high (Malte Brun), and gives name to the department: the Roc de Malpertuis in the immediate neighbourhood of Lozère (if indeed it be not of the Mont Lozère itself) is 5000 feet high. The chain of La Margeride, which is about 13 miles from the Cevennes at Mont Lozère, and unites that mountain-range with the volcanic group of Auvergne, extends through the department in the direction of its length; and the mountains of Mont Lozère and a part of the Cevennes extend into the adjacent department of Aveyron. The mountain-ranges of the Cevennes and La Margeride determine the watershed of the department, and divide it between three of the great river-basins of France. The small por-

The rivers are all small in that part of their course which lies within the department. To the basin of the Rhône belong the Cèze, which rises in Mont Lozère, and brings down particles of gold; the Gardon d'Alais, the Gardon de Minet, and the Gazizan, which unite their streams in the adjacent department of the Gard, on the eastern border of which all these rivers join the Rhône. The Chassezac and the Thone water the western part of the department; the Ardèche flows joined by the Ardèche into the Rhône. To the basin of the Loire belong the Allier, which rises in the north-eastern slopes of La Margeride, and for some distance separates this department from the adjacent department of the Lot, and the Chapeaux and the Aance, which also rise on the same slope and flow northward into the Allier. To the basin of the Garonne belong the Lot and the Tarn. The Lot rises in the south-western slope of La Margeride, and flows far from Mont Lozère, an extent of 150 miles, and joins the Chacezac into the department of Aveyron: nearly 40 miles of its course belong to this department. It receives the Cournages and some other small streams; the Coulagnet and some others fall into the Coulagnet. The Truyère, or Taurion, a more extensive tributary of the Tarn, which is part of La Margeride, and flows north-west; it does not join the Lot till far beyond the boundary of this department. The Bès, a tributary of the Truyère, forms the boundary between...
orchards, in which are apple and pear trees, producing excellent fruit, and many fine walnut-trees. The town possesses a site nearly triangular, and is at an elevation of about 1800 feet above the level of the sea. It is surrounded by a small hill. The streets are all laid out, narrow, crooked, and dirty; the houses, which are roofed with slate, are ill built. The castle is a very inferior building, though its steeples are praised by some writers for the lightness and boldness of their architecture. The former episcopal palace, now the prefect's house, has a handsome gallery and salon with some good paintings. There are several fine old inns, and the country-houses of Mende are all of stone, and have large windows, nearly 50 feet wide. The population of Mende was, in 1851, 4539 for the town, or 3522 for the whole commune; and in 1836 it was 3599 for the commune. A considerable quantity of serge is manufactured in this district. About the town are several fine woods, and there are two considerable yearly fairs. There is a high school, a public library, a theatre, and an agricultural society. There is in the immediate neighbourhood of Mende a mountain which rises: the height is about 8000 feet above the sea, and is divided into three parts, the highest of which is a very rocky mass, and the other two are covered with heath and woods. This mountain, which is called Mont-Berthez, is rarely visited by people, who, however, agree, if not succoured, to surrender to him, laid the keys of the place on Du Guesclin's coffin.

In the arrondissement of Florac are the town, a feeder of the Tarn; and Montaigut, a small town, and Sainte Enimie on the Tarn; Meyrueis on the Jonte, and Montesquiou, the capital of the department.

The department is divided into three arrondissements, as follows:

<table>
<thead>
<tr>
<th>Arrondissement</th>
<th>Area in square miles</th>
<th>Population in 1831</th>
<th>Com. in 1831</th>
<th>Com. in 1851</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florac, S.</td>
<td>6,185</td>
<td>6,185</td>
<td>6,185</td>
<td></td>
</tr>
<tr>
<td>Meyrueis, N.W. &amp; W.</td>
<td>53,335</td>
<td>54,102</td>
<td>53,335</td>
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</tbody>
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In 1831 the population was 140,347; in 1851 it was 141,733.

The department is divided into 27 cantons, or districts under a justice of peace.

In the arrondissement of Mende are Mende and Beleymard on the Lot; Villedo near Munde Lotzère; Langogne on the Allier; Châteauneuf de Randon on the Chadeau, and Grandrieu on a small river of the same name which is a tributary of the Cévennes. Mende was first mentioned by Gregory of Tours, who calls it Minmate. It was the capital of the province of Gavard. It is in a dreary and mountainous district; but the immediate neighbourhood of the town, which is in a valley watered by the Lot, is pleasant, being studded with gardens, meadows, and woods.
carried on to some extent. Chesnuts are prepared for stores in considerable quantity. But the different branches of industry are not sufficient to give employment to the inhabitants, a number of whom emigrate yearly to the coal mines and power of locomotion, and resperes. The trade of the department is trifling; the want of navigable rivers and the labour of the conveyance over the mountains are great impediments. The exports are cattle, Chesnuts, and woolen stuffs.

This wall against the, of the department constitutes the diocese of Mende, the bishops of which are suffragans of the archibishop of Aix. It is in the jurisdiction of the Cour Royale and the circuit of the Académie Universitaire of Nimes. It is in the ninth military division, the head-quarters of which are at Montpellier. It returns three members to the Chamber of Deputies.

In respect of education it is below the average of France; the number of young men enrolled in the military census of 1578-29 who could read and write was twenty-seven in every hundred, the average of France being thirty-three.

This department formerly constituted the territory of the Galab, a Celtic people. Their capital was Andementum, afterwards called Gabali, from the name of the people, now Jauja, a village between St. Chely and Menere. Several antiquities have been discovered at Javola; such as the ruins of columns, statues, and buildings; coins, medals, and vases. Traces of the Roman road from Lugdunum (Lyon) to Tossa (Toulouse) have been observed in this district. Some of the Celtic monuments called dolmens are yet in existence.

Before the Revolution this department constituted the most part the province of Gévaudan in Languedoc. Portions of the district of Le Velay and of the diocese of Lescar, both also in Languedoc, are included in the present limits.

LÜBECK is situated in 53° 51' N. lat. and 10° 50' E. long., on a long eminence between the rivers Trave and Wakenitz. Its territory is bounded on the east by Mecklenburg-Sterlitza, on the west by Oldenburg and Holstein, on the north by Mecklenburg; the north and west between Holstein and Mecklenburg, extends to the Baltic. Its territorial possessions were formerly very scattered; some detached portions were in Holstein, some in Lauenburg, and others in Mecklenburg. By the decision of the diet of February, 1691, modified in 1804 by a treaty with Oldenburg, it obtained, in exchange for many of its distant districts, a continuous tract on the Trave. It is very uncertain at what time a town was first erected on this spot. There is evidence that a flourishing commercial town was here built by the Wilzen, a Slavonian tribe, as a place of arms, on the banks of the Schwartau. This was Old Lübeck, which was however soon taken by the Obotri, whose king, Henry, chose it for his residence. The Swedes then took it, but Adolphus II., count of Holstein, founded the present city of Lübeck on the banks of the Trave in 1140. He peopled it with fugitives and settlers from Westphalia and the Netherlands, and merchants from Saxony, being jealous of the rapid rise of Lübeck, to the detriment of Bardewick, did his utmost to interrupt its commerce by land. In 1157 the city was nearly destroyed by fire. In 1158 Adolphus codified it and its territory to the city of Lübeck, which, with the town, suburbs, walls, gave it magistrates of its own, granted it several privileges, allowed the northern nation a free trade to it, and gave it the celebrated code of laws called das Lübecker Recht, which was subsequently adopted by so many countries. One of them was Oldenburg, founded in 922 by the Emperor Otho I., was transferred, at the instance of Bishop Gerold, to Lübeck. This proved a great advantage to the city. The churches of St. Mary and St. Peter were already founded, and restored by Bishop Henry the Lion in 1176. Henry the Lion put under the ban of the empire, Lübeck was forced to submit to the emperor Frederick I., during whose absence in the Holy Land, Henry returned from England, and recovered it, but had held it only three years when it was taken by Adolphus III., count of Holstein (1192). Ten years later it was taken by Woldemar, brother of Canute, king of Denmark. The Danes proved very oppressive masters, and the citizens, taking advantage of some favourable circumstances, surprised the Danish garrison in 1256, and placed themselves under the protection of the emperor Frederick II., who confirmed all their privileges, and made Lübeck a free imperial city.

The citizens had many contests to maintain with their jurymen. The deer was a national property, but their number and prudence triumphed on every occasion. The wealth of the inhabitants of Lübeck increased, and it joined the Hanseatic League, of which it became the head. [HANSE TOWNS.] Its fleets commanded the Baltic; Gustavus Wasa found an asylum there, and Lübeck's wealth enabled it to participate in the affairs of the kingdoms of the North. As an evidence of the prosperity of Lübeck during the flourishing period of the Hanseatic League, it may be stated that the dreadful pestilence called the 'black death' is said to have made Lübeck the chief sufferer of the two cities, Lübeck and Liibeck, which were decimated in the affairs of the kingdoms of the North.

During the flourishing period of the Hanseatic League, it may be stated that the dreadful pestilence called the 'black death' is said to have made Lübeck the chief sufferer of the two cities, Lübeck and Liibeck, which were decimated in the affairs of the kingdoms of the North.

The city of Lübeck, being on a moderate eminence between the Trave and the Wakenitz, is very pleasantly situated, and is very clean and cheerful. The interior is more regular than in most of the old German cities, with interesting groups of perpendicular houses, and straight streets. The houses are built of stone. A great number of the houses are in the old-fashioned style, with the gable ends towards the street, but the more modern are in better taste. Besides the cathedral, which contains valuable paintings and statues, mentioned above, there are five parish churches, of which that of St. Mary is celebrated as one of the finest Gothic churches in northern Germany. It is 340 feet long, and the middle nave 152 feet high (so stated by Zeitschrift). The church contains very valuable paintings by Holbein, Vandyck, Perugino, Aldenbey, and other masters, a very curious astronomical clock, a 'Dance of Death,' a fine organ, and a remarkable altar by Guillaume of Antwerp, &c. The other churches are much inferior to St. Mary's. Lübeck has also been a great centre of the wool trade, and of various manufactures, which are numerous and admirably conducted. The other public establishments and buildings are the gymnasium, the commercial institution, the patriotic society, the mechanics' school of design, the Roman Catholic chapel, the Calvinist church, and the garrison and barracks. The senate-house, an antient Gothic building, contains the hall where the deputies of the Hanse formerly met.

The territory which we have already described, including the detached district and those which it possesses in common with Hamburg (Hamburg and Lübeck are about 100 square miles in extent, with a population which may now be estimated at 46,500, of the city being 26,000 at the most, of Traveenrode 1100, and of Bergedorff and its district 3500. The manufactures are of various kinds, but none on a large scale.

The commerce of the city is beginning to be of considerable importance. It has 80 ships of its own, and the arrivals are above 900 annually. At the moment that this is written, no special notice. Between Hamburg and Lübeck there has always been a great transit trade; the route is partly through the Danish territories, and has hitherto been free from all tolls. But in defiance of antient and still subsisting treaties between Denmark and the two cities, the Danish government last year levied a duty on all goods going from Hamburg to Lübeck, and vice versa. It is singular that the duty on the first is fixed at double that on the second. It almost seems as if this were in the interest of the many British colonial produce and manufactured articles, sent from Hamburg to Lübeck, to be preserved in the former, and destroyed in the latter.
amount to above a million sterling annually, while the Russian and Swedish goods from Libeck to Hamburg do not exceed 200,000£. The two cities have appealed to the Diet of the German confederation, whose decision is anxiously awaited. For some years past there has been a regular communication by steam-boat between Libeck and St. Petersburg, and his residence is generally made in three and a half or four days. (Hassel, Geogr., vol. v.; Stein, Geogr.; Zeitl. Anzeichen von Libeck.)

LUBECK (Principality). [Oldenburg.] LUBENIETSKI (Latinized Lubienietski). There are three names of this name (two Apraksin, two Christopher, and two Stanislaus), all distinguished in the Polish Sician controversy. A list of their several writings may be found in Sandius, 'Bibl. Antiqu.,' Freistadt, 1684. The subject of the present article is Stanislaus the younger, who was born at Czarn, August 23, 1623, and died in exile at Hamburg, May 18, 1675. He was minister of a church at Libeck, until driven out by the arm of power for his opinions. He died, as is stated, by poison; a fact borne out by the death of that great liberal and serious lover of his wife, after eating of the same dish, and by the neglect of the Hamburg magistracy to institute the investigation usual in cases of sudden death.

The theological works of Lubienietski are numerous, and may be found in Sandius, with the exception of the 'Hist. Lubecker,' published in 1685, at Freistadt, with a Life prefixed. But the work which makes his reputation more European, and entitles him to a place here, is his 'Thesaurus Theologicus.' This work was published at Amsterdam in 1677 (Sandius says 1669), but a later edition under his name has a Leyden title-page, and the date 1681. This change of titles in different parts of the same edition was formerly not uncommon, and has caused much confusion. A pictorial frontispiece has the following inscription: 'Statis in ulna Jesu luce.'

The 'Thesaurus Theologicus' consists of three parts. The first contains the correspondence of the author with men of science throughout Europe on the subject of the controversy. It was in its original form, from Vossius, Oldenburg, Hevelius, Kircher, Bouillaud, Von Guericke, &c. &c. The second part contains an elaborate account of all the comets (415 in number) recorded in history down to the year 1695. It is written in support of the hypothesis that comets foretell both good and evil, in opposition to the prevailing notion that they were harbinger of misfortune only; and this opinion is supported by history, it being clearly shown that public events of both characters usually followed close upon comets. The third part points out that the comet of 323 strengthened the heresy of Arius, it also brought about the council of Nice; and this, from Lubienietski, was not a little satirical. We are in doubt whether to conclude that the author maintained his hypothesis in good faith, or to consider his line of argument as the best practical mode of attacking the prevailing terror. And our doubt becomes stronger when we see that in the third part, called 'Thesi Cometici exitus,' he rather widens his hypothesis; and whereas he had before maintained that comets foretell both good and evil, he now states the dilemma that they predict both or neither, but still cautions.

In the late discussions about Halley's comet, this work of Lubienietski was freely cited in proof of one or and another premonition, of that memorable body. It seems to have been taken for granted that the mere mention of a comet by this author is sufficient evidence of its having really appeared. It may be useful therefore on future occasions to record, for those who want the text from the 'Thesaurus Theologicus' (and the same caution may be given with respect to Riccioli's list), first to examine the authority on which the fact rests. Lubienietski has collected every instance, and gives his original; but this, though done with care and great labor, has not produced research which will appear wonderful when we remember that the investigator was driven from country to country, and engaged in continual theological controversy, should only serve to enable the reader to discriminate. Many of the authorities cited are worthless; and even happens that the original historian of one of Lubienietski's comets was born many hundred years after the phenomenon for the appearance of which he is made sufficient evidence.

LUBLIN, a woiwodship, or province, of the kingdom of Poland, is composed of the circles of Lublin, Chelm, Jonow, and Zamoski, which formerly belonged to the kingdom of Galicia, and were attached by Poland in 1664. It lies between 56° 17' and 51° 47' N. lat., and 21° 45' and 24° 7' E. long, comprising an area of 6650 square miles, with a population of 500,000 inhabitants. It is bounded on the north by Podolia, on the south by Galicia, on the east by Zamoski and the Swedes, and on the west by Poland. Lithuania separates it from Samland, the Russian territory, and the Wieprz, which flows through it, a some distance from Podolia. This province has extensive forests, and in some parts mooriness, but has, it is consider able, a great variety of good arable land, and a great number of lakes, with a fine breed of cattle. Lublin and Zamoski have metals except copper. It is divided into four circles (in Polish obce), viz., Lublin, Zamoski, Hurbiaszow, and Krasnastaw. The principal towns in the circle of Lublin, besides the capital, are the following: Chelm, on the Wieprz, has a castle, three churches, a Capuchin convent, and 3900 inhabitants. Kurow, on the Kurowa, has a fine palace of Count Potocki, two churches, and 1920 inhabitants. In 1616 a mineral spring was discovered, the resemblance of its water to that of Fontainebleau. Pultawa, on the Vistula, was the residence of Prince Czartoryski, whose splendid palace, with its library of 60,000 volumes, many MSS., a collection of rare Polish antiquities, and countless treasures of art, was celebrated throughout Europe; in 1683, when, with the fall of the temple of the Sibyl, the country-seats of Marynke and Parcheke, and the Duchy-farm in an island of the Vistula, the banks of which were covered with pretty country-houses, sunk into the hollow, but all is now desolate. During the ill-fated Polish revolution, when the treasures of art were destroyed, depopulated, or carried away, the estate confiscated, and the noble owner driven into exile. Zamoski, the capital of the circle of that name, a very strong fortress, is situated near Zamoski, after his victory over the archduke Maximilian of Austria. The houses were built in the Italian style; and a high school with a considerable library, which was long celebrated, was founded in 1609. The Cosacks and Swedes besieged it in 1662, and after its possession was lost to Poland, it fell to the share of Austria. In 1810 the Poles took it; and in 1811 the Russians. In 1826 the Polish state bought the town and environs of Count Stanislaus Zamoski, who received for it above fifty estates, belonging to the Counts Staszic. Here, in 1619, the discovery was made of a Roman town, which had been inhabited by Jews. It is now a flourishing town, with a large and wealthy Jewish community. In the town itself there are two synagogues, besides several smaller ones. It is also the seat of a rabbinical seminary. The town has a palace, formerly the residence of Count Potocki, and contains many fine buildings.

Lublin, the capital of the government and circle, is in 51° 16' N. lat. and 22° 30' E. long. It is situated on an eminence on the river Bystrica, and is surrounded with walls, ditches, and great gates; it is in the upper and lower town, which is the latter which is chiefly inhabited by Jews. It has a dilapidated castle on a hill, and is the seat of a bishop and court of appeal. The main buildings are the fine town-hall, eighteen churches, of which the cathedral, dedicated to the Ex-Jesus, the Visitandines, the Dominicans, and the Carmelites, are worthy of notice; there are twelve monasteries and six nun's convents (some of which have been suppressed), a Piarist college, a seminary, a gymnasium, an academy of sciences, and several hospitals and charitable institutions. The town has three annual fairs, which are frequented by great numbers of German, Greek, Russian, Armenian, and Turkish merchants; and it has a good trade in woolen cloths, corn, and Hungarian wines; but the late events have doubtless had an injurious effect on the trade of the town, as
they have had on the manufacture of woollen clothes, which was just beginning to flourish. The population is 12,500.

LUCA'NUS, MARCUS ANNÆUS, was born at Corduba (Cordova), in the province of Bética, in Spain, a.d. 35. He was the son of M. Annaeus Mela, who was the brother of the philosopher Lucan. He obtained some distinction at Rome under the most eminent philosophers and rhetoricians of the time. His poetry recommended him to the notice of Nero, who treated him with distinguished honour, and bestowed upon him the dignity of quaestor and augur. He is said to have written 'Voyage du Levant,' which was published in 1664, Silvarum paper, (1627), and was afterwards published about the time of the first edition of the poem, 'Voyage du Levant, in 1714, when he visited most of the same countries which he had seen in the preceding journey, for the purpose of correcting his former observations. In 1719, he returned to Paris, and in 1719 published an account of this third journey: 'Voyage dans la Turquie, l'Asie, Syrie, Palestine, Egypte, &c.' which is the best of the three, though it also contains some errors. Lucan was more sanguine than those who visited the Levant, and at last died in Spain, in 1737, having gone thither for the purpose of examining the antiquities of that country.

LUCCA, DUCHY OF, a small state in Italy, south of the Apennines of Modena and between them and the sea, is bounded on the north by the territories of Modena, on the east and south by the grand-duchy of Tuscany, and on the west by the sea. It is watered by the river Serchio, which rises in the Apennines of Garfagnana and enters the Mediterranean of the sea. The area is about 320 Italian square miles of 60 to one degree of latitude. (Sarristos, Saggio Statistico.) Its population is 152,000, being the most densely inhabited state of Italy.

The territory of Lucca is naturally divided into three great districts among the Apennines, including the valley of the Lima, an affluent of the Serchio; 2nd, the valley of the Serchio, including the fine plain of Lucca, which is cultivated like a garden; 3rd, the hills near the sea, which are in part marshy, but produce corn and cotton. The people of Lucca are generally poor, sober, and shrewd; many of them emigrate to foreign countries, where they work as plasterers and image-makers, and others from the mountainous districts repair every winter to the mariners of Tuscany and other neighbouring states to work in the fields, whence they return home in the summer.

The country is divided for administrative purposes into eleven 'Comuni,' namely, Lucca, Viareggio, Camaiore, Villa Basilica, Camaiore, Montignoso, Borgo, Longia, Bagno, Gallo, and Lucchesi, the latter is the seat of one of the towns and of the bishopric. The town of Lucca is the seat of a college of 200,000. The town is the head of a union of two clerical seminaries, and a college for 60 boarders, besides 16 grammar-schools, in the whole, attended by 427 pupils, and 102 elementary schools, 39 of which are grammar schools, by 231 teachers, and 10,500 children. In Lucca, the University of Lucca, the Conservatorio, and an Ospizio for the poorer class, the whole of which board about 524 girls. The clerical establishment consists of one archbishop (of Lucca), 4 chapters, 230 parish incumbents, 308 priests, and 460 curates, who are all in minor orders only. There are also 12 convents of men with 391 inmates, and 11 convents for females having altogether 435 nuns. The military consists of one battalion of infantry, one company of artillery, and a body of gendarmes, in all 794 men, besides 460 marines, who are estimated to be 3,966,000 Italian livres, or francs. The chief heads of the expenditure are 396,000 livres for the duke's civil list; 281,000 for the military; 1,223,000 for the expense of the administration. The communes tax themselves for their several expenditure, which amounts to about 150,000 livres altogether.

There are nearly 40,000 landed proprietors in the whole duchy, or about one to every four individuals; 6300 persons employed in trade and manufactures; 1270 employed in the civil departments, 79000 clerks, and 46000 servants and women. Viareggio, with 6000 inhabitants, is, next to Lucca, the principal town of the duchy; it has a roadstead which it frequented by coasting vessels, both native and foreign, which take in cargoes of oil, timber, beans, and other minor articles. The value of the oil exported is about 60,000 livres, and that of silk is 260,000. The principal article of importation is salt fish. The manufactures of the country consist of silks, which employ 2500 workmen; woollens, which give employment to 900 persons; paper, glass, iron, and copper works, linen and cotton cloth, and clothing.

The present duke of Lucca is Carlo Ludovico, son of Ludovico, prince of Parma, and of Maria Luisa of Spain. Carlo Ludovico was born in 1799, and he succeeded to the sovereignty after the death of his father. He then reduced his own civil list by one third, namely, 198,000 Italian livres, and has since made other useful reforms and improvements in his little state.
LUCCA, the capital of the duchy, is situated in a rich plain watered by the Serchio, and surrounded by mountains: it is twelve miles from the sea, and about ten miles north-east of Pisa; its circumference is a little more than three miles, and it contains 22,000 inhabitants. Lucca is surrounded by ramparts, which are decorated with triumphal arches and a very pleasant promenade. The town is well-built, and is supplied with good water, and the streets are well paved and clean.

Lucca, like most other Italian cities, is rich in churches: the cathedral, which belongs to the fourteenth century, is adorned with several good paintings, and still more with statues and monuments by the native sculptor Cavallini. The archiepiscopal archives and those of the chapter contain a vast mass of historical documents, parchments, and MSS., some of which date from the tenth to the sixteenth century. The other remarkable churches of Lucca are, St. Frediano, which has some fine Roman columns; St. Francesco, with the tomb, indicated by a simple inscription on the wall, of the greatest man that Lucca has produced, Castruccio Castracani; St. Cristoforo, with the tomb of the sculptor Cavallini; St. Michele; St. Paulino; St. Giovanni, with its baptistery; St. Maria in Cortile Landini, which contains several good paintings; the annexed convent belongs to the 'Chierici Regolari della Madre di Dio,' an order founded in 1307, in the style of the Church by Giovanni di Leonardo, a native of Lucca, which has produced many learned men. It has a library of 20,000 volumes. The ducal palace is vast, but unfinished; it has a gallery of valuable paintings by the great masters, and a library of 250,000 volumes. The castle of Fronsauro, or town-house, which belongs to the fifteenth century, is a massive samba building. The palace Guidici, where the public archives are kept, and that of the Marquis Bernardini, are also worthy of notice.

The academy of letters and sciences of Lucca, instituted in 1817, which consists of thirty-six members, holds its meetings once a month in a hall of the Lyceum, and has published several volumes of 'Atti,' or memoirs. The duke is a member of this academy.

Lucca ('Luga') is mentioned in ancient history as a town belonging to the Etruscans after they had conquered the country between the Arno and the Macra and taken it from the Ligurians. It afterwards became a Roman colony. There are still remains of a Roman theatre, and of an amphitheatre.

Lucca in the middle ages was a republic, often at war with Pisa and Florence. It was at one time with Pisa at the head of the Guideline party [CASTRUCCO CASTRACA-

LUCERNA. [LUCERN.] LUCERN (Medicago sativa), a plant of the Leguminosae family, is the most valuable forage plant, for feeding cattle, than any other known plant can be compared to. In good deep loams lucern is the most profitable of all green crops, when properly managed, the quantity of cattle can be kept good, an army of lucern during the dry season, exceeds belief. It is a rich and abundant forage plant of which the growth of lucerne grass is a blue-green shade, is wonderful, and wonderful as the growth of clover sometimes is in a field which has been lately mown, that of lucern is far more rapid. Where a few tufts of lucern happen to be, they will rise a foot above the surface, while the grass and clover, which were mown at the same time, are only a very few inches high.

Lucern, sown in a soil suited to it, will last for many years, shooting its roots downwards for nourishment in the dry and sunny weather, and growing as high as the ground will allow, and will remain alive out of the dryest and most sultry weather, when every blade of grass or grasses, which has no root system, are all either dead or, if alive, will grow slowly, and become useless to cover the lucern-field with a coat of coal ashes and poor sand, merely to keep down the weeds, where this can easily be done.

The soil in which it is intended to sow lucern-seed should be well prepared. It should be shallow and deeply ploughed, then trodden, so much the better; and if the surface is covered with some inferior earth from the subsoil, it will be no detriment to the crop, for it will prevent grass and weeds from springing up, and save much trouble. Lucern is not a good crop for acid ground, nor a good crop for sandy ground, and the ground should be well ploughed and harrowed, a very small quantity of barley, not above a bushel to the acre, may be sown, or rather drilled on the crown, and at the same time from 30 to 40 lb. of lucern seeds are sown in the furrow, and both harrowed in and lightly rolled. If the land will not bear to be land without water furrows will be useless to sow lucern in it.

As the crop comes up it must be carefully watched, expense must be spared to do this effectually, for success must attend the season in which barley is reaped, the study which will probably be strong, should be pulled up by the hand, and by harrowing, if the plants of lucern are strong, and at all events, the ground must be cleared of weeds. It must not be fed off with sheep; they would be the worst enemies of the lucern, as the flower is formed. If it is kept clear of weeds first year, there will be little difficulty with it afterwards when the roots have become strong. The second year lucern will be fit to cut very early, and in a favoura
season it may be cut four or five times. After each cutting it is useful to draw heavy harrows over the land, or an instrument made on purpose resembling harrows, the teeth of which are flat, and cutting the soil like small scythes. It will not injure the plants, even if it divide the crown of the plant, or bring about the level of the lawn and make it firm. Liquid manure which consists of the urine of cattle and drainings of manure is often spread over the lucern immediately after it has been mown, and much invigorates the next growth; but if it is rich to a good depth, this is useless and unnecessary. The lucern will wilt in a swampy place if mown seven to twelve years, when it will begin to wear out, and, in spite of weeding, the grass will get the upper hand of it. It should then be ploughed up, all the roots carefully collected, and the dung and lime let in, and a course of regular tillage should succeed. The same land should not be sown with lucern again in less than ten or twelve years, after a regular course of cropping and mowing. If a few seeds fall upon lucern thrive better than on any other green food. Horses, in particular, can work hard upon it without any corn, provided it be slow work. Cows give plenty of good milk when fed with it. In spring it is apt to purge cattle, which, with a little attention, is conducive to their health, but if it is allowed to remain until the grass is overmoist with dew, they run the risk of being hoven. These inconveniences are avoided by giving it sparingly at first, and always keeping it twenty-four hours after it is cut, during which time it undergoes an inelastic fermentation, and the juice is fixed and its force conserved, instead of being less nutritive in this state, it is rather more so.

An acre of good lucern will keep four or five horses from May to October, when cut just as the flower opens. If it should be planted in a place where it cannot be consumed, it should be made into hay; but this is not the most profitable way of using it, and the plant, being very succulent, takes a long time in drying. The rain also is very injurious to it in a half-dry state; for the stems and leaves of lucern are full of air, and when the leaves are presented to the air, it becomes with sharp times, used immediately after mowing, will pull up all the grass which may spring up. No farmer ought to neglect having a few acres in lucern on his best land.

LUCERNIT, a species of lucern, cultivated by Muller (Zoologia Danica). It is much allied to Ac- timia, Linn., and includes one or perhaps two living species from the North Sea and English Channel. [ZOANTHARIA.]

LUCIA, SAINT, one of the Lesser Antilles, situated in the number of islands occupied in 1817, when 392 out of every 1000 were carried off; the smallest number, 56 in 1000, occurred in 1832. The deaths among the black troops during the same twenty years did not average more than 43 in each 1000, and varied from 75 in 1819 to 12 in 1827. The fort in which the greater part of the troops are stationed is on the summit of a steep hill called Morne Fortuné, about 1000 feet above the sea, and having many swamps in the low land in the neighbourhood.

Castrics, the only town on the island, lies at the bottom of a long winding bay in a low marshy spot, surrounded by an amphitheatre of hills, which greatly impede ventilation.

The population of the island in 1835 consisted of 374; in 1663 they were 1055, of whom 617 were males and 438 females. The number of persons of both sexes was 108,645 in 1838. In 1835 there were produced of these articles—

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Of this number about 3300 reside in the town, the rest are located on the plantations throughout the cultivated parts of the island. The chief productions are araucaria, coffee, and cocoa. In 1835 there were produced of these articles—

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remainder of his life we find him travelling about from place to place, and visiting successively Macedonia, Cappadocia, Paphlagonia, and Bithynia. The greater part of his time however was passed in Athens, where he lived on terms of the greatest intimacy with Demosthenes, a philosopher of great celebrity, and where most of his works were probably written. Towards the latter part of his life he held a lucrative public office in Egypt, which was bestowed upon him by the emperor Commodus. The account of his being taken prisoner, for having given out that Christian religion, rests on no credible authority, and was probably invented either by Suidas or some other Christian writer of similar character.

The characteristics of Lucian are written in remarkably pure and elegant Greek, and are free from the false ornaments and artificial rhetoric which characterise most of the writings of his contemporaries. Modern critics have usually given him his full meed of praise for these excellencies, and have held his genius above all others, which was an innumerable of the infidel author, whose only object was to correct the minds of his readers, and to throw ridicule upon all religion. But these opinions appear to us to have arisen from a mistaken and one-sided view of the character of Lucian. He seems to have been an infidel respected for his pedantry, superstition, and imposture; the quackery and imposition of the priests, the folly and absurdity of the superstitious, and especially the solemn nonsense, the prating insouciance, and the immoral lives of the philosophical Christians of his age. (See Wieland, vol. iii. p. 241.) Lucian must be regarded as the Aristophanes of his age, and, like the great comic poet, he had recourse to raillery and satire to accomplish the great objects he had in view. His study was human characters, and the pursuits of which have furnished ample materials for his observation. Many of his pictures, though drawn from the circumstances of his own times, are true for every age and country. As an instance of this we mention the essay entitled 'On those who serve the gods.' If he in vain attacked the follies and vices of mankind too freely, and occasionally uses expressions which are revolting to our ideas of morality, it should be recollected that every author ought to be judged of by the age in which he lived, and not by a standard of religion and morality which was unknown to the writer. The character of Lucian's mind was decidedly practical; he was not disposed to believe anything without sufficient evidence of its truth; and nothing that was ridiculous or absurd escaped his raillery and sarcasm. The tales he has composed respecting the delusions and absurdities of the gods, which were still firmly believed by the common people of his age, were especially the objects of his satire and ridicule in his dialogues between the gods and in many other ways. That he should have attacked the Christians in common with the false syllogists of the Ptolemaic religion will not appear surprising to any one who considers that Lucian probably never took the trouble to inquire into the doctrines of a religion which was almost universally despised, in his time, by the higher orders of society.

Lucian's statements have sometimes had an historical value assigned to them which he does not appear to have intended: the story of Herodotus reading his history at the Olympic games is one of these. ([Hieron.]] Lucian had a great deal with which he has identified by his descriptions in his 'Action.' 'Zeuxis,' Eikonies, &c.
The best editions of Lucian's works are by Hesmerius, who only edited part of the first volume, and Reitz (vol. 4to), by Lehmann (Leipz. vol. 8vo), and the edition published by the late Savigny (1828). Lucian in German is by Wieland (6 vols. 8vo.); there is an English translation by Tooke (Lond. 2 vols. 4to.; 1820).

LUCIAN, SAINT, presbyter of Antioch, is said by some writers, but without sufficient authority, to have been born at Samosata; he suffered martyrdom during the reign of Diocletian, and was buried at Helenopolis in Bithynia. He is frequently mentioned by ecclesiastical writers as a man of great learning and piety. Eusebius calls him a 'person of unblemished character throughout his whole life.' (Hist. Eccl. vol. 3. chap. 4.) On the anniversary of Lucian's martyrdom, pronounced a panegyric upon him which is still extant. Jerome informs us, in his 'Catalogue of Ecclesiastical Writers' (c. 77), that 'Lucian was so laborious in the study of the Scriptures, that in his own time some copies of the Scriptures were known by the name of Lucian.' We learn from some part of his works (Pref. in Parad., vol. i. p. 1203), that Lucian's revision of the Septuagint version of the Old Testament was generally used by the churches from Constantinople to Antioch. Lucian also made a revision of the New Testament, which Jerome considered inferior to his edition of the Septuagint.

There were extant in Jerome's time some treatises of Lucian concerning faith, and also some short epistles; but none of these have come down to us, with the exception of a few fragments. There has been considerable dispute among critics respecting Lucian's belief in the Trinity. From the manner in which he is spoken of by most of the Trinitarian fathers, and also by some of the heathen authors, it would appear that he was quite orthodox, since he is said by Alexander (in Theodoret, Hist. Eccl., c. 4, p. 125, B) to have been excluded from the Catholic Church by three bishops in succession, for adverting the doctrines of Paul of Samosata. It is however certain that he has been received back into the Catholic communion before his death.

LUCIDA, a name formerly given to the brightest star in any constellation: thus we have Lucida Hydri, Lucida Lyrae, &c.

LUCIFER, bishop of Cagliari in Sardinia, is principally known in ecclesiastical history for refusing to hold an union with the clergy who had, during the reign of Constantius, conformed to the Arian doctrines, although they had been received again into the church all the Arian ecclesiastics openly acknowledged their errors. In consequence of the decision of the synod at Alexandria, Lucifer eventually left the Catholic church, and his followers are spoken of as a sect of Luciferians under the name of Luciferians. The number of this sect was considerable: Theodoret says that it was extinct in his time (Hist. Eccl., iii. c. 5, p. 128, D.). Their opinions however excited considerable attention at the time when they were entertained by a number of the most eminent, if not the whole, of the great men; among others by Faustus, Marcellinus, and Hilarius. Jerome wrote a work in refutation of their doctrine, which is still extant.

Augustine remarks, in his work on Heresies (c. 1xxv.), that the Luciferians did more harm concerning the human soul, which they considered to be of a carnal nature, and to be transfused from parents to children.

Lucifer is acknowledged by Jerome and Athanasius to have been well acquainted with the Scriptures, and to have been esteemed in private life, but he appears to have been a man of violent temper and great bigotry. Being banished from Sardinia by Constantius, in consequence of his opposition to the Arian doctrines, he resided for many years in Syria; but after the death of this emperor he returned to his native country, where he died.

The writings of Lucifer were published by Tillet, Paris, 1564; they consist of—Two books addressed to Emperor Constantius in defence of Athanasius; 'On the Duty of having no communion with Heretics'; 'On the Duty of showing no mercy to those who stand against God'; and a short Epistle to Florentius.

LUCILIUS, CAEUS, was born at Susa, Arabia Petraea (Velleius, ii. 13, 14); he is said to have died c. 103, in his forty-sixth year; but the expression of
Horace (Sat. ii. 1, 34), in which Lucilius is called old times), seems to imply, as Mr. Clinton has remarked (Fast. Indi., vol. iii., p. 135), that he lived to a later date.

Lucilius is expressly said by Horace (Sat. i., 1, 61) to be the first writer of Roman satire; by which we understand that the Roman writer had composed at least some satirical compositions beyond the time of Ennius and others are frequently mentioned by ancient authors; but that Lucilius was the first who constructed it on those principles of art which were considered in the time of Horace as essential in a satirical poet. The satires of Lucilius were very popular even in the Augustan age; and to his writings some of the most eminent satirists of antiquity, Horace, Juvenal, and Persius, appear to have been indebted in no small degree for many of their most successful qualifications.

In addition to his satires, which were divided into thirty books, Lucilius also wrote a comedy entitled 'Numularius,' episodes, and hymns, none of which are extant, with the exception of a few fragments from his satires, which were collected and published by Dr. Leyer, 1767. Scanty as these fragments are, they enable us to form some idea of the style of Lucilius, which appears to have been distinguished by great energy and power of expression, but to have been deficient in elegance and clearness. Horace mentioned, as an exception to this, the short piece of Lucilius which his versification was rugged and uncorrect (Sat. i. 4, 9-11); but Quintilian (Inst. Or., x. 1), on the other hand maintains that Lucilius has not given a fair estimate of the poetry of Lucilius, and that his satires were distinguished by great power of opportunity. The description of the feelings which generally form the chief charm in poetry, Lucilius has succeeded in imparting to his didactic and philosophical work much of the real spirit of poetry; and if he had chosen a subject which would have afforded him a greater field of scope for his rebus, he might have been ranked among the first of poets. Even in the work which has come down to us we find many passages which are not equalled by the best lines of any Latin poet, and which, for vigour of conception and splendour of diction, will meet with a comparison with the best efforts of the poets of any age and country. In no writer does the Latin language display its majesty and stately grandeur so effectively as in Lucilius. There is a power and an energy in his descriptions which we rarely meet with in the Latin poets; and no one who has read with interest to Venus, at the beginning of the poem, or his beautiful picture of the busy pursuits of men, at the commencement of the second book, or the progress of the arts and sciences in the fifth, or his description of the Peloponnesian war, which he supposes to be compound of different kinds of air inhaled from the atmosphere; in the fourth book he inquires into the origin of sense and perception, and the nature and origin of dreams, which lead to a lively and minute consideration of the folly and miseries of this earthly love; in the fifth he gives an account of the origin and laws of the world, and describes the gradual progress of mankind from a state of nature to civilization, as well as the origin and progress of the arts and sciences; and in the sixth he attempts a description of a number of extraordinary phenomena, such as water-spirits, hurricanes, earthquakes, volcans, and pestilential diseases. The poetry of Lucilius does not appear to have been highly estimated by the majority of his countrymen. Ovid certainly speaks of it in the highest terms (Amor., xv. 23), but Quintilian mentions it rather slightly (Just. Orat., x. 1); and Cicero does not praise him with considerable reservation (Epist. ad Quint., x. 11). The nature of his subject and the little taste which the Romans in general resident adjoins the palace. The remainder of the city is built in a purely Oriental style, for which reason it has the most interest for European visitors; it contains many splendid houses and religious edifices, erected by Ashop ud Dowlah, and an unfinished palace begun by 'Ali. This is not the only structure in the city which has been left in an unfinished state; it was universally felt by the Mohammedans in India against completing any unfinished undertaking of a deceased person. The English have cantonments to the east of the Goontry, and a few miles distant from Lucknow. Besides the persons connected with the British Resident residing there, there are several English and other Europeans and their descendants living in the city, who are in the pay of the king of Oudo. Lucknow is distant from Benares 189 miles, from Agra 202 miles, from Delhi 38 miles, and from Calcutta 650 miles, all travelling distances.

LUCON. [Vendr.]

LUCON. [Philippine Islands.]

LUCRETIA. [Brutus, M. J.]

LUCRETUS CARUS, was born b.c. 55, and died b.c. 52, in the forty-fourth year of his age. We possess no particulars respecting his life, but he appears to have been born at Rome, and was probably of equestrian rank, and is said to have put an end to his own life.

The poem of Lucrétius, entitled 'De Rerum Natura' (On the Nature of Things), contains a development of the physical and ethical doctrines of Epicurus. Notwithstanding the nature of the subject, which gave the poet an opportunity for the description of the feelings which generally form the chief charm in poetry, Lucrétius has succeeded in imparting to his didactic and philosophical work much of the real spirit of poetry; and if he had chosen a subject which would have afforded him a greater field of scope for his rebus, he might have been ranked among the first of poets. Even in the work which has come down to us we find many passages which are not equalled by the best lines of any Latin poet, and which, for vigour of conception and splendour of diction, will meet with a comparison with the best efforts of the poets of any age and country. In no writer does the Latin language display its majesty and stately grandeur so effectively as in Lucrétius. There is a power and an energy in his descriptions which we rarely meet with in the Latin poets; and no one who has read with interest to Venus, at the beginning of the poem, or his beautiful picture of the busy pursuits of men, at the commencement of the second book, or the progress of the arts and sciences in the fifth, or his description of the Peloponnesian war, which he supposes to be compound of different kinds of air inhaled from the atmosphere; in the fourth book he inquires into the origin of sense and perception, and the nature and origin of dreams, which lead to a lively and minute consideration of the folly and miseries of this earthly love; in the fifth he gives an account of the origin and laws of the world, and describes the gradual progress of mankind from a state of nature to civilization, as well as the origin and progress of the arts and sciences; and in the sixth he attempts a description of a number of extraordinary phenomena, such as water-spirits, hurricanes, earthquakes, volcans, and pestilential diseases. The poetry of Lucrétius does not appear to have been highly estimated by the majority of his countrymen. Ovid certainly speaks of it in the highest terms (Amor., xv. 23), but Quintilian mentions it rather slightly (Just. Orat., x. 1); and Cicero does not praise him with considerable reservation (Epist. ad Quint., x. 11). The nature of his subject and the little taste which the Romans in general
manifested for speculations like those of Lucretius, may perhaps account for his poetry being estimated below its real merits.

In modern times the 'De Rerum Natura' has been frequently attacked on account of its philosophical dogmatism; and the works that have been written against it is a long Latin poem, not without considerable merit, by the Cardinal Poligny, entitled 'Anti-Lucretius, sive Deo et Naturae,' in nine books, addressed to Quintinius, an atheist. The 'De Rerum Natura' of Lucretius is Cicero's favourite philosophy, his only study. But his commentaries on it are very useful, 1563, 1570, 1668, 1725; Wakefield, 1796-97, 1801; Forbiger, 1828. The 'De Rerum Natura' has been translated into most European languages; the translation by the Emperor the Empress of the Empire, by Cleeve (frequently printed), and by Mason Good, with the Latin text, and numerous notes of little value, in 2 vols. 4to., 1805. The French by Lagrange, with the Latin text, 1799, and the German by Meinecke, 1795, and by Knebel, 1831, and the Italian by Marchetti, 1717, frequently reprinted.

Lucrine Lake. [Avrno.]

Lucullus, a genus of the natural family of Rubiaceae, suborder Cinchonaceae, tribe Cinchoneae, and subtribe Eucneona, rounded panicled flowers of this affinity, of this genus, that of the tree yielding Peruvian bark, or true Cinchona, in which indeed the only known species, L. gratissima, was placed by Dr. Wallich and figured in his 'Plant. FL. Nepal,' t. 21. It is found in great abundance near Nag-Uron, and forms several smaller hills in the Valley of Nepal; also at Bechiaco and Koolakan. It delights in exposed, rather naked situations, blossoming, according to the situations where it is found, nearly the whole year round. It is well cultivated on the Pandon Hills, below, flowing the month of September. As seen by Dr. Wallich it attains a height of sixteen feet, but he was informed of its growing to a larger size. It has been introduced into and has flowered in this country; but from the nature of the climate where it is indigenous, it is only suited to the greenhouses of England. Its locality and affinity are interesting, particularly when coupled with the prevalence in the same mountains of two other genera, Hymenodictyon and Hyponex, belonging to the same subtribe Eucneona, and that the culture of the tree is situated in the part of the Indian territory where these valuable plants might most certainly be grown, and yield a profitable article of commerce. 'It is impossible to conceive anything more beautiful than this tree, when covered with its numerous rounded panicled flowers of an exquisite affinity, very fragrant, large blossoms.' (Wallich, l. c., p. 30.)

Lucullus, LuciUS Licinius, descended from a distinguished Roman family, was born about b.c. 115, and served in the Mithridatic war. Sulla had a very high opinion of the talents and integrity of Lucullus, and employed him, though he was very young, in many important enterprises. Whilst Sulla was besieging Athens (b.c. 87), Lucullus was sent into Egypt and Africa to collect a fleet, which he was expected to afford to Mithridates, with Mithridates, he was left in Asia to collect the money which Sulla had imposed upon the conquered states. So great was the regard that Sulla had for Lucullus, that he dedicated his Commentaries to him, and in his last will made him guardian to his son.

In b.c. 74, Lucullus was elected consul, and was appointed to the command in the war against Mithridates. During the following eight years he was entirely engaged in conquering and in a series of campaigns completely defeated Mithridates and his powerful adherents Tigranes. In b.c. 73 he defeated Mithridates at Cyzicus on the Propontis, and in the following year again defeated him at Cabiri, on the borders of Pontus and Armenia. In b.c. 69 he marched into Armenia against Tigranes, who had espoused the cause of his father-in-law: and completely defeated his forces near Tigraneocerta in Armenia. He followed up his victory by the capture of Tigraneocerta, and in the following year also took Niclis in Armenia. In b.c. 68 he marched into Armenia against Tigranes, who had espoused the cause of his father-in-law: and completely defeated his forces near Tigraneocerta in Armenia. He followed up his victory by the capture of Tigraneocerta, and in the following year also took Niclis in Armenia. In b.c. 68 he marched into Armenia against Tigranes, who had espoused the cause of his father-in-law: and completely defeated his forces near Tigraneocerta in Armenia. He followed up his victory by the capture of Tigraneocerta, and in the following year also took Niclis in Armenia. He followed up his victory by the capture of Tigraneocerta, and in the following year also took Niclis in Armenia. He followed up his victory by the capture of Tigraneocerta, and in the following year also took Niclis in Armenia. He followed up his victory by the capture of Tigraneocerta, and in the following year also took Niclis in Armenia.
a muddy sediment; from which circumstance it has also been called ‘mudstone’ by Mr. Murchison. Very rich in fossils.

Aymestry Limestone.—A concretionary and polymeric limestone, of local occurrence and small thickness, merely separating the other terms. Many fossils.

Ludlow, a considerable landed proprietor in that county, and its representative in the Long Parliament, was an advocate of the democratic cause, which was likewise eagerly espoused by his son. Edmund Ludlow volunteered in England in 1642, but, justifying his insecurity in the field, he resided in France, where, after the Battle of Edgehill (1642): From this time, with only occasional interruptions, he filled such stations, military or civil, as rendered him an important partisan. He denounced the magistracy of the king, and sought the destruction of the garrison by bribery and corruption. He was one of the most active assistants in Col. Pride’s purge, one of the foremost of the king’s judges, and one of the most eager voters for the annihilation of the House of Peers. His independence rendered him obnoxious to King and Parliament.

During the events of the Civil War, in the latter half of 1642, Ludlow was elected to Parliament in Essex, and as a member of the army, went as far as Antioch, which he reached with a small detachment. He appears to have been the first to reach Antioch, but he did not remain there very long, as he went on to the temple by bringing it into a Greek, Triumphus of Ephe-

Ludlow, was then with Paul (Acts, xxi. 17, 18), and the accusation would have regarded him also, if he had not been named upon as a Jew by religion. In the latter passage Paul distinguishes between other individuals who are of the circumcision, who seems to show that Luke was not a Jew by birth; unless indeed the Luke here mentioned be another individual, which we have no reason to believe. Of the period of his conclusions we know nothing. Cavendish and Mill have supposed that this was converted by Paul at Antioch; but they are not supported by any antient writer: nor is it likely that Luke would have passed over such an event in writing the Acts.

From the passage (Acts, xxi. 30-31), and from the testimony of Eusebius, Jerome, and other early writers, it appears that Luke was a physician. Another tradition makes him a painter, but this statement is generally allowed to deserve no credit; and the opinion of Grotius and Pearson, that Luke was a slave during part of his life, seems equally unfounded.

Luke’s native country is unknown. Eusebius and Jerome say that he was a native of Antioch; but this statement is not found in Irenæus, Clement, Tertullian, or Origen, nor is there any evidence whatever that Luke was a pupil of St. Paul. Eusebius conjectured that this tradition arose from Confounding the Evangelist with Lucius of Cyrene, who is mentioned as living at Antioch, in Acts, xi. It is probable that this Lucius and the Evangelist Luke were the same person.

Ludolphus, Job (the Latinized form of his real name Leuthold), was born at Erfurt, the 13th June, 1624, and was educated at the university of Leyden, where he prepared for the ministry; and he left Leyden with the assistance of a native of Abyssinia. He published at London, in 1661, a dictionary and grammar of this language; but a much improved edition of the dictionary appeared at Frankfurt in 1698, and of the grammar in 1702. Ludolph also paid great attention to the Abyssinian language, of which he published a dictionary and grammar in 1698.

The most important of Ludolph’s other works are: Historia Ethiopiae, sive Description Regni Hassabominorum, quod vulgo male Presidenti Johannis vocatur, Frankfurt, 1681; (‘Ad Historiam Ethiopicam Commentarius,’ Frankfurt, 1693; (there is an English edition of the ‘History of Ethiopia’); Relatio Nova de hierbo Hassabominati ex India nuper allata, Frankfurt, 1693; (Appendix Secunda ad Historiam Ethiopicam, continens Dissertationem de Locustis, Frankfurt, 1694; ‘Epistola Ethipica ad univ. Humbert. Genev. Rom. gentem scripta,’ Frankfurt, 1683; ‘Epistola Samiranam Sichemitarum ad Ludolphum,’ with a Latin translation and notes, 1688; and a translation of the Psalms into Ethiopian, Frankfurt, 1701.

Lugano. (Ticino.)

Lugo. (Galiaclia.)

Luke, St., the Evangelist. Respecting the birth and early life of this evangelist we have no certain information; but the history which he brought something from his own work, the Acts of the Apostles. (‘Apokries, Acts, etc.’) Are considerable knowledge of the Greek language is displayed in his writings, especially in the introduction to his Gospel, which is written in elegant Greek. On the other hand, his language and style contain elements that are very familiar to the religious rites of the Jews, while in the mode of computing time he follows. (Luke, xii. 1; Acts, i. 3; xii. 3, 4; xvi. 16, 17, etc.) Hence it has been much disputed whether he was a Jew or a Gentile before he embraced Christianity. He resided in Switzerland, and is described as one of the twelve stations, or one of the twelve assistants of Bolen, confirmed by a tradition current in Jerome’s time, that Luke was a Greek by birth, but became a proselyte to Judaism early in life. This opinion is supported by Acts, xx. 28-31, and Coloss. iv. 11, 14. From the former passage we learn that Luke and his countryman John, the Apostle, went from Antioch to Jerusalem and the temple by bringing it into a Greek, Triumphus of Ephe-

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Ludlow, EDMUND, was born at Maiden-Bradley in Wiltshire, in 1587, and became a student in 1592, at Oxford. Ludlow, a considerable landed proprietor in that county, and its representative in the Long Parliament, was an advocate of the democratic cause, which was likewise eagerly espoused by his son. Edmund Ludlow volunteered in England in 1642, but, justifying his insecurity in the field, he resided in France, where, after the Battle of Edgehill (1642): From this time, with only occasional interruptions, he filled such stations, military or civil, as rendered him an important partisan. He denounced the magistracy of the king, and sought the destruction of the garrison by bribery and corruption. He was one of the most active assistants in Col. Pride’s purge, one of the foremost of the king’s judges, and one of the most eager voters for the annihilation of the House of Peers. His independence rendered him obnoxious to King and Parliament.

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In Acts, xi, 28, the Cambridge MS. has a various reading, and when we gathered together, there stood up, &c., as though John was connected with the Church at Antioch about A.D. 42; but this reading is not usually accounted of any great authority.

The first distinct mention of Luke in the New Testament is in Acts, xvi, 10, 11, where, in relating the vision which Paul saw at Troas, the writer suddenly begins to use the first person plural, which is inferred that Luke here joined the Apostle (about A.D. 53), whom he accompanied to Philippi (ver. 13). He seems to have remained at Philippi during the absence of the Apostle, and through the good offices of Luke and Mark, as disciples of the Apostle, as distinguished from John and Matthew, who were disciples of Christ.

Respecting the end of Luke’s life, the tradition is, that after Paul’s liberation from his first imprisonment, he returned to Athens, where he resided some few years, wrote his Gospel and the Acts of the Apostles, and died at an advanced age (some say 80, others 84 years), probably by a natural death, as we have no mention of his martyrdom.


The genuineness and authenticity of this Gospel are attested by the unanimous voice of the early Christian writers, and confirmed by all the evidence of the passage. The author is thus compared with this Gospel, l. 4. Michaelis has indeed objected to its canonical authority, and to that of St. Mark’s Gospel also, chiefly on the ground that these books are not the production of Apostles. But such an argument cannot be admitted to be ‘the universal opinion of all the primitive Christians, nor have we any proof that inspiration was confined to the Apostles. The genuineness of parts of the Gospel has been called in question, especially of the 1st and 2nd chapters. But these chapters, being in all existing copies separate editions by way of external evidence which no internal difficulties can overthrow.

Many of the early writers state that St. Luke composed his Gospel under the superintendence of St. Paul. Irenæus says that Luke put down in a book the Gospel preached by Paul, xvii. 20. But this is not the sense that is often understood by Paul. In all probability St. Luke would not neglect St. Paul’s assistance in so important a work, but the idea that the Gospel is really St. Paul’s, and that St. Luke was little more than his amanuensis, is not sustained by any striking agreement in the style of the two writers. The most probable date of St. Luke’s Gospel is about A.D. 63 or 64. It is closely connected with the Acts of the Apostles, and was probably written not long before that book, as it is written by the same hand and in the same style and language. St. Luke’s Gospel is of the ‘Great Art’ (Arab Magna). Having besought James of Aragon to establish a monastery in Majorca for the education of thirteen monks in the Arabic language and the duties of a missionary, he wrote this Gospel to convince the unbelievers, and to establish the tenance of Pope Honorius I. for similar institutions and his own mission. Receiving however little encouragement, he visited Paris and Genoa with the same design, and with similar success. From Genoa he crossed to Aragon, where he was received with great respect, and allowed to establish a monastery and a school, and to carry on the negotiations with St. Luke, but which his followers and successors carried on. The tenance of Pope Honorius I. for similar institutions and his own mission. Receiving however little encouragement, he visited Paris and Genoa with the same design, and with similar success. From Genoa he crossed to Aragon, where he was received with great respect, and allowed to establish a monastery and a school, and to carry on the negotiations with St. Luke, but which his followers and successors carried on.

Like the Acts of the Apostles, this Gospel is dedicated to Theophilus. The conjectures of critics respecting this personage are as numerous as is usual on such points; the conclusion at which Kuinoel arrives is that he was a converted Gentile, writing without the bounds of Palestine. This dedication, the testimony of early writers, and some marks in the work itself, such as the explanations given of matters exclusively Jewish, prove that the Gospel was designed for the benefit of Gentile converts.

The Gospels are not arranged, like those of St. Matthew and St. Mark, in chronological order, but rather according to the subjects. Schleiermacher has proposed the following classification:—
The 'Ars Magna Lulli, or the Lullian Art,' which found a few admirers, who styled themselves Lullists, after its inventor, and was subsequently revived and improved by the celébres de Rome, is an attempt to give a formal arrangement of all ideas, with a view as well to facilitate instruction as to systematise knowledge. The means which this logical machine employs are:—1, letters (alphabetum artes), which stand for certain general terms common to all science; 2, figures, viz.—triangles, squares, and circles, which indicate the relations of those general terms; and 3, sections (camerae), in which the combinations of these ideas or terms are formed by the adjustment of the figures. In the present work the order of this plan is unaltered, as the predicates are inscribed, and certain subjects on the circles. On the circle of subjects, the triangles of the predicates being so fixed as to move freely, every possible combination of ideas is supposed to be produced by their revolution, according to which letters are selected, and the order of this gives the letter inscribed on the margin of the circle. Hence arise definitions, axioms, and propositions, which vary infinitely according to the different application of general or particular predicates to particular or general subjects. As however the Lullist was a mere tool of the fiction, and the combinations of this mechanical logic are purely arbitrary, the knowledge to which it professes to lead must be narrow and limited, and at best it does but furnish a few laws of universal reason for analysing a multitude of ideas as the inventive, whether it is, was founded on a feeling of the inadequacy of the dialectic of the schools, and as it furnished a weapon for its opponents, the name of Raymund Lully has been gratefully placed on the list of the reformers of philosophy. Special personal character he seems to claim more justly our admiration for the iron resolution with which, late in life, and for the most part unassisted, he applied himself to the study of science and philosophy, and for the steady resolution with which he persevered in his scientific researches, in spite of all discouragements and disappointments.

The works of Lully have been edited by Salzinger, ‘Raymondi Lullii opera omnia,’ in 10 vols. fol., Mayence, 1721-42.

LULLY (or LULLI), JEAN-BAPTISTE, the father of French dramatic music, was the son of a miller, and born at Florence in 1633. Showing in his infant years a strong propensity for music, a kind-hearted monk taught him the use of the guitar, an instrument then as common in Italy as it is at present. Having attracted the notice of the Chevalier Guise, he was by that nobleman recommended to Mademoiselle de Montespier, niece of Louis XIV., as a page, and sent to Paris in his fourteenth year. But his ready wit and talent found no favour in the eyes of the princes, who were not set on educating their bristles, but delighted in a pleasing countenance. Instead therefore of becoming the bearer of the lady's fan, or perhaps of her confidential communications, he was placed in the kitchen, and commenced his life of activity in the humble capacity of marmiton, or scullion. This degradation however did not much discourage him. He had previously acquired some knowledge of the violin, and now dedicated every spare moment to it. His devotion and industry were crowned with success. The report of his skill quickly ascended to the ears of the princes, who employed him under an able master, and he soon was numbered among the king's twenty-four violins. He now aspired to the rank of composer, and having produced some airs which 'with ravished ears the monarch heard,' was appointed one of the royal presence, commanded to perform himself the compositions which had excited so much pleasure, and from that moment the road to promotion and honour was opened to him. He was immediately placed at the head of a new band, denominated Les Petits Violons, which soon eclipsed the famous bande de Paris.

Lully now was engaged to write music for the Ballets, entertainments of a mixed kind much admired at court. But Louis, ambitious of rivalling the grand opera not long before established in France, and encouraged in his design by the Cardinal Mazarin, founded, in 1669, the Académie Royale de Musique, an institution which has ever since continued to flourish. At the head of this Lully, who had been appointed Surintendant de la Musique de la Chambre Royale, was soon reelected, and being associated with Quinault, the admirable lyric poet, carried into effect the king's wishes to their utmost extent. His abilities and exertions were not, as is too usual, suffered to remain unrewarded: besides the glory of complete success, he acquired a handsom fortune, and was selected for a knight of the Order of the Garter.

The proud Sçourts Hesitates hesitated at admiring a marmiton into their number. Lully complained to the king, 'I have honoured them, not you,' said the monarch, 'by putting a man of genius among them.'

Lamy and Courie both place the genus *Lumbricus* among the Annelids.

The former makes the *Echiuridæ or Lumbriïdæ* the second family of his *Apod Annelida*. He observes that they have in truth projecting bristles (teises) externally; but it is a matter of fact that the parts are unarmed, or furnished with pediform mamillae, serving as a case for bundles of retractile bristles, as in all the Annelids of Lamark's two following orders, the Antenna Annelida and the Sedentaria. Among the former, which he gave in 1669, the Annals of the Academy, he states, that request by fishermen as a bait for sea-fish. The genus, as he left it, comprised only the two species *terrestris* and *marinus*, and is arranged under his *Fermes* (Intestina), between *Ascaris* and *Lumbricus*.

LAMARCK And Courtier both place the genus *Lumbricus* among the Annelids.

LAMBRICUS. The genus *Lumbricus* of Linnaeus consists not only of the *Earth-worms*, properly so called, but of an intestinal worm or Enterozoon (var. *Intestinalis* γ), the *Ascaris lumbricoides*, which so often infects children, and is selected to the honourable rank of Secretary of the class. However, the work of Sauvage was imputed to the bad state of body produced by his habitual indulgences. As a composer, he is to be ranked among the first in his art. To him music is indebted for some of its greatest improvements, and his works display genius of a high order tempered by the soundest judgment. Even the fame of Cuvier acknowledged that he modelled his metamorphosis on those of Lully; and our illustrious Purcell did not hesitate to profit by many hints afforded by the nineteen operas composed by the favourite of Louis le Grand.

The former makes the *Echiuridæ or Lumbriïdæ* the second family of his *Apod Annelida*. He observes that they have in truth projecting bristles (teises) externally; but it is a matter of fact that the parts are unarmed, or furnished with pediform mamillae, serving as a case for bundles of retractile bristles, as in all the Annelids of Lamark's two following orders, the Antenna Annelida and the Sedentaria. Among the former, which he gave in 1669, the Annals of the Academy, he states, that request by fishermen as a bait for sea-fish. The genus, as he left it, comprised only the two species *terrestris* and *marinus*, and is arranged under his *Fermes* (Intestina), between *Ascaris* and *Lumbricus*.
Cuvier makes the *Abraehntia* (Les Abranches) the third order of the Annelida, and the *Scigebruchus* (Abranches Scigeres, ou Pourvues de soies) the first order of that family. The order consists of the genera *Lumbricus* and *Nais*. It is to the first of these genera that we call the attention of the reader, and it is characterized by a long cylindrical body divided by wrinkles into a great number of rings, and by a mouth without teeth. Cuvier remarks that the *Lumbrici* ought to be subdivided; and Savigny has, in effect, subdivided the family into the genera *Ente*., *Hypogon*, and *Citello*. MM. Audouin and Milne Edwards distinguish also the genus *Trophiomia*.

Of these *Ente*ion has upon each ring four pairs of small bristle-like processes, eight in all, to each of which is stated to have two bristle-like processes only on each ring. *Hypogon* has, besides the other bristle-like processes, one on the back of each ring. (This form is noticed as being American only.)

Savigny described upwards of twenty species, which he considered to be distinct, and to have been confounded previously under the name of *Lumbricus terresris*. M. Morren, in his *Treatise on the Natural History and Anatomy of the Lumbricus terrestris* (Brussels, 1829), appears to be doubtful with regard to the number of species described by Savigny and others, and inclines to the opinion that they are merely varieties. M. Milne Edwards (edit. of Lamarck's *Animaux sans Vertebres*, 1838) considers the characters on which Savigny relied as distinctions for dividing the group into the three genera as of little importance.

We take as an example the common Earth-worm (*Lumbricus terrestris* of Linn.).

**Organization.**

Eternally the Earth-worm presents a body composed of numerous narrow rings closely approximated to each other; at about one-third of their length may be seen, particularly at the season of reproduction, the *cilatium*, which becomes at that time a huge and important organ. The overlying part of the body is reddish or bluish, and of a shining aspect, and the animal has the power of secreting a viscid substance, which forms a sort of protecting sheath to its body, and greatly facilitates its progress through the earth. The anus is minute and unprovided with either tentacles, branchiae, or cirri.

**Respiratory System.** — The generally received opinion is that the blood of the Earth-worm is aerated by means of lateral series of small pyriform vesicles, analogous to the branchial organ of fish. [Lehmann, p. 302], and opening externally by very minute pores.

**Digestive System.** — The mouth consists of two lips without tentacles or armature of any description; but the upper lip is elongated and proboscidiform. The oesophagus, which is a wide, mesenterial canal, is continued straight downward for half an inch, and ends in a dilated bag or reservoir, to which succeeds a muscular stomach or gizzard, disposed in the form of a ring. The intestine is constructed at each segment of the animal by a series of loops or partitions, connecting it to the parts of the body, and swells out the intermediate spaces, when distended by the particles of earth. (See the *Catalogue of the Physiological Series of Comparative Anatomy in the Museum of the Royal College of Surgeons at London*, vo. i., and the preparation in the Gallery, No. 470.)

**Nervous System.** — The nervous system of the Earth-worm consists of a series of small ganglions close to each other. In the Museum of the College of Surgeons is a preparation, No. 2294, of this body, which conveys a minute idea of the structure. It is an Earth-worm (*Lumbricus terrestris*, Linn.) with the ventral parieties of the abdomen removed to show the nervous chords, their ganglions, and lateral branches. The divergence of the two main lateral chords, in order to pass to the dorsal aspect of the oesophagus, is clearly shown (Cut., vol. iii., part 1).

**Generative System.** — All the internal organs, or with male organs so disposed as to secrete the ova of a different individual. (Owen.) Cuvier was of opinion that they were hermaphrodites, but that it was possible that their junction only served to excite each other to fecundate themselves. It has been doubted whether these animals are oviparous, ovoviviparous, or viviparous. M. Montgérè and Sir Everard Home suppose them to be viviparous. M. Leon Dufour (1780) has published it that they have been induced by M. Duget (1826), who believes that the living vermiform animals which M. Montgérè took for young *Lumbricus* were intestinal worms only. M. Morren, in the work also alluded to (1829), states that the mode of reproduction is both oviparous and viviparous, but this opinion he is ])ot by the animal under certain unfavourable circumstances, as like the viper, deposit the eggs, instead of hatching them internally. The statement of M. Montgérè is that the eggs descend between the intestine and the external envelope of the body, and are laid in masses of the dropping of the excreta, where they are hatched, according to Cuvier, the young making their exits from the anus. M. Dufour, on the contrary, says they produce eggs analogous to those of the leeches. In the Museum of the College of Surgeons (no. 2295), is an Earth-worm (*Lumbricus terrestris*, Linn.) shown with the parieties of the body slit open along the back, and the two halves divaricated, so as to expose the alimentary canals, testes, and ovaries. Four portions of black bristle-like matter found in the genital ducts are for some time immediately external to the bristles, two on each side. The ovaries are the larger oval bodies, of a less pure white than the testes, in the interspace between the bristles. They are four on each side, and increase in size as they are situated nearer the body. The alimentary canal has a separate external aperture, which is very minute; and impregnation takes place by the apposition of the genital outlets of one individual to those of another, without intromission, as in the leech. The oviparous form is figured in a succeeding series (Owen, *C. v. iv.); Nos. 2295 and 2296 are also preparations illustrative of the organs of generation in these animals.

**Organs of Progression.** — Earth-worms creep at a good pace by means of muscular contractions and dilatations acting on the rings, which carry on their under-side the bristle-like processes above mentioned: these last operate as feet. The power of elongation is considerable, and the anterior part of the animal acts as a sort of awl in perforating the earth.

**Habits.** — The Earth-worm, as far as relates to appearance above the surface of the ground, may be considered almost a nocturnal animal. In the night-season and at early morning hundreds may be seen, though not one out of ten can be seen during the day. The colouring of the ground and undisturbed earth is red in the morning; pouring liquids into their holes, is to be found moving about in the day. The power of reproducing parts after mutilation is, as must have noticed, very great in this animal.

**Utility to Man.** — The worm-casts, which so much annoys the green manuring agriculturist, have had by many no small importance to the agriculturist; and this despised creature is not only of great service in loosening the earth and rendering it permeable by air and water, but is also most active and powerful agent in adding to the depth of the earth, and in converting barren wastes and districts into a superficial layer of wholesome mould. In a paper on *The Form of Mould*, read before the Geological Society of London, by Charles Darwin, Esq. F.G.S, the Earth-worm is constantly remarked upon as striking character by which it perforates the soil, or, as it is commonly called, vegetable mould, is distinguished. These are, its nearly homogeneous nature, although overlying different kinds of subsoil, and the uniform looseness of the surface. The latter letter of the following paragraph is written in a gravelly country, where, although in a ploughed field a large portion of the soil consists of small stones, yet old pasture land not a single pebble will be found with a stone of the surface. The author's attention was called to this by Mr. E. Cross, of Waddington, in Staffordshire, who showed him several fields, some of which, a few years before, had been covered with lime, and others with burnt marl and cinders. These substances, in every case, are now buried to the depth of some inches beneath the turf. Three fields of these, besides the first, consisted of good pasture land, which had been limed, without having been ploughed, about twelve years and a half before; the turf was about half an inch thick; and inches and a half beneath it was a layer or mass of some aggregated lumps of the lime, forming, at an equal depth
A well-marked white line. The soil beneath this was of a gravelly nature, and differed very considerably from the mould nearer the surface. About three years since cinders were first seen in the surface, and carefully examined to and above the white layer of mould. Some other cinders, which had been scattered in another part of the same field, were either still lying on the surface or entangled in the roots of the grass; the agency by which these cinders were removed only from the cinders being now buried in a layer, nearly an inch thick, three inches beneath the surface. This layer was in parts so continuous, that the superficial mould was only attached to the subsoil of red clay by the layer of cinders and pebbles, which is nearly an inch thick, and a half an inch thick, composed of fragments of burnt marl (confusorius from their bright red colour, and some of considerable size, namely, one inch by half an inch broad, and a quarter thick), of cinders, and a few quartz pebbles mingled with earth; lastly, about four inches and a half beneath the surface was the original black peaty soil. Thus a layer (nearly four inches thick) of peaty soil, and then a layer of cinders, was laid down. These substances now occurred, which, fifteen years before, had been spread on the surface. Mr. Darwin stated that the appearance in all cases was as if the fragments had, as the farmers believe, worked themselves down. It does not bear examination: two covered the others and the mould should separate in so short a time the fine from the coarse earth, and accumulate the former on those objects which so lately were strewn on the surface. Mr. Darwin also remarked that year towns, in fields which did not appear to have been burnt, but covered by cinders, and pieces of pottery and bones some inches below the turf. On the mountains of Chile he had been perplexed by noticing elevated marine shells, covered by earth, in situations where rain could not have washed it on them.

The explanation of these circumstances, which occurred to Mr. Wedgwood, although it at first appear trivial, the author does not doubt is the correct one, namely, that the whole is due to the digestive process by which the common cinder or burnt lime, as the farmers term it, which lies between the blades of grass in the fields above described, the author found that there was scarcely a space of two inches square without a little heap of the cylindrical castings of worms. It is well known that worms swallow earthy matter whole, and Blackstone remarks that the earthworms, for example, they ejet at the mouth of their burrows the remainder in little intestine-shaped heaps. The worm is unable to swallow coarse particles; and as it would naturally avoid pure lime, the fine earth lying beneath either the cinders and burnt marl, or the powdered limewash, would, by a slow process, be removed and thrown up to the surface. This supposition is not imaginary, for in the field in which cinders had been spread out only half a year before, Mr. Darwin actually saw the castings of the worms heaped on the smaller fragments. No doubt it is at first sight impossible to account for the number of Earth-worms (as every one must be aware who has ever dug in a grass-field) making up for the insignificant quantity of work which each performs.

On the above hypothesis, the great advantages of old pasture land are always particularly averse from breaking up, is explained; for the worms must require a considerable length of time to prepare a thick stratum of mould, by thoroughly mingling the original constituent parts of the soil, as well as the remains added by man. In the peaty field, in fifteen years, about three inches and a half had been well digested. It is probable however that the process is continued, though at a slow rate, to a much greater depth; for as often as a worm is compelled by dry weather to ascend from its burrow to the surface, when it empties the contents of its body, a few particles of earth. The author concluded by remarking, that it is probable that every particle of earth in old pasture land has passed through the intestines of worms, and hence that in some senses the term "animal mould" would be more appropriate than "vegetable mould." The agricultural in ploughing the ground, follows a method naturally and perfectly; and he only imitates in a rude manner, without being able either to bury the pebbles or to sift the fine from the coarse soil, the work which nature is daily performing in the field.
of self-control which constitutes him a responsible agent, are in a painful state of uncertainty. As a general rule it may however be laid down that where unsoundness of mind, of such a nature as to render the party incompetent to exercise any self-control, is established, criminal punishment will not be inflicted but that he will be kept in safe custody during the pleasure of the crown (39 & 40 Geo. III., c. 94, and 1 & 2 Vict., c. 14). On the subject of criminal responsibility, and what constitutes unsoundness of mind in a legal point of view, the reader is referred to the various treatises on insanity and jurisprudence to which reference Dr. Ray, lately published at Boston in the United States: and also generally to Dr. Haslam’s ‘Observations on Madness and Mania’ ; ‘Medical Jurisprudence as it relates to Insanity’ ; ‘Illustrations of Madness,’ and his other works. That the subject is one of the most delicate, and remarks may be made on it with due regard to uncertainty.

In lunacy the question to be decided is not whether the individual be actually of sound mind, though a jury on an inquisition held under a commission of lunacy must express their opinion or finding in the form that the alleged lunatic is of sound mind. It is attended by an implication that the lunatic has generally been, and though such must be the finding in order to make a man legally a Lunatic, the real question is whether or not the departure from the state of sanity be of such a nature as to justify the confinement of the individual, or the taking away of his property. It should be particularly remembered that his belief may be of wide, mistaken, and even be the subjects of delusions on certain subjects, and yet both inoffensive and capable of directing pecuniary matters. The individual’s natural character should be taken into consideration; he should be found to be in a unstrung, and temper, and his education in estimating his ignorance and apparent want of intellect; and lastly due allowance must be made for the irritation and excitement produced in a mind, perhaps naturally weak, by the inquiry itself, and in some cases it may be necessary to deprive him of his liberty by order of the court, if it be considered necessary to prevent his harming himself.

Confidence should not be placed in depositions or evidence founded on short and incautious examinations.

Sometimes the madman conceals his disease, and with such remarkable cunning and delusion, that the detection of it is very difficult; this is more particularly the case when the insania consists in some hallucination; and here, unless the nature of the delusion be known, it will often be in vain to attempt to elucidate by questions any proof of unsoundness. Those to whom the subject will be will reason properly on general points, provided these do not become associated with the prevailing notions which constitute their disease.

When insanity is urged as the ground of non-responsibility, it has been said that the main point to be ascertained is, whether the individual has or had a ‘sense of good and evil,’ ‘of right and wrong.’ But this, though the doctrine of the English law, is found inapplicable to practical application; and the records of trials of this kind show that the like to the doctrine has generally been the proof, or absence of proof, that insanity of some kind existed at the time of the act, although before and after it the power of reasoning and the knowledge of right and wrong might be retained. Thus, on the trial of Hatfield for shooting at George III. Erskine argued that the existence of a delusion in the mind absolves from criminal responsibility, if it be shown that the delusion and criminal act were connected; and on this principle Hatfield was acquitted, but could it have been Bellingham however, who shot Mr. Percival under an equally powerful delusion, in consequence of the greater excitement in the public mind occasioned by the result of the insane act, was convicted and executed. In many instances homicide has been committed by a lunatic, and any insanity is a plea for murder, but by a method impalpable to kill. Here there is generally evidence of the feelings and propensities of the individual having been previously disordered, of his being in fact the subject of moral insanity (Insanity, and judgment in such cases is aided by the absence of reason to the act. Where the general conduct of the prisoner has been such as to indicate unsoundness of mind, though even considerable contrivance has accompanied the act, or where there is evidence of his having been the subject of an irresistible impulse to kill, it becomes now the practice to find a verdict of acquittal, in opposition to the older authorities, who confined the exemption from responsibility on the ground of insanity within very narrow limits.

A lunatic, according to law, responsible for acts committed during a lucid interval, is by which he is understood, not merely, not mere remissions of the violence of the disease, but periods during which the mind resumes a perfectly sane condition. In forming an opinion concerning such lucid intervals, it is to be remembered that there are in most cases of lunacy two or more intervals of lucidity. Whether the duration before it can be thence concluded that the mind is perfectly sane; and that lunatics, when apparently convalescent, are subject to sudden and violent paroxysms.

One of the most difficult points to be determined is what conclusions are to be arrived at as to the existence of unsoundness of mind, when the mind is confessedly impaired. The decay of intellect at an old age is first manifested in the loss of memory of persons, things, and dates, and particularly with respect to recent impressions. But it is not the mere liability to forgetful-ness involving the possession of his personal property, and the situation of his property, business, and family affairs, which constitutes a lunatic.

The care and custody of idiots and lunatics form a branch of the royal prerogative, and have been transferred to the care of the courts of law. Since the dissolution of the Court of Wards, the lord chancellor has been specially appointed to exercise this power. [Chancellor.] The method of proving a person to be of unsound mind, for the purpose of depriving him of the control of his property, and to prevent him from making dispositions of it, is by the act, was supported by affidavits, and in some cases upon a person’s interview also with the alleged lunatic, when such interview is accompanied by the affirmative answers or admissions of the patient, he is considered to be in the state of mind of the party, and if the judge shall find him to be lunatic or of unsound mind, he is committed to the committee of the royal household, and the court will order allowances to be made near relations of the party who is of unsound mind, and to his natural child, where the circumstances of the several parties justify it, and require it, and will direct proper acts to be done in consequence of the will, executed by the will of the lunatic, which is irrecoverable, &c.


LUNAR THEORY. By the theory of a planet a mutual attraction is deduced, and the law of gravitation. This subject is discussed in the article Gravitation For the numerical data see Moon.

LUNATIC. [Lunacy.] LUNATIC ASYLUMS. Besides the large endowed hospitals for the reception of the insane and numerous private establishments for the reception of the insane.

In the counties of London and Westminster, and seven miles around, in and the county of Middlesex, these asylum acts are the direct jurisdiction of the Metropolitan Commissary of Lunacy, who are assisted by the lord chancellor for the purpose of licensing and visiting such houses. The commissioners are in number not less than 15 and not more than 20: four or five must be physicians, and two barristers. In other parts of England similar
powers of granting licences and appointing visitors are delegated to the justices in general or quarter-sessions; but notices of all such licences are forwarded to the office of the metropolitan commissioners.

No person can be admitted into the house kept for the reception of persons entitled to a certificate signed by two medical men, not interested in the profits of the establishment, who must have separately visited and examined the patient within seven days before his admission into the asylum; or, upon satisfactory reasons being shown, the asylum may have the signature of one medical man only, but then it must be signed by a second within seven days after the patient's admission.

A variety of statutes have been passed for the management of the reception of persons of unsound mind, and of county lunatic asylums for the maintenance of pauper and criminal lunatics, the last of which is 3 & 4 Will. IV., c. 64, continued by 1 & 2 Vict., c. 73. (For the treatment of lunacies see Insanity.)

LUNATION, the time between two new moons.

LUNDIN is a town in Sweden, in the province of Scane and Lään of Malmöhus, in 55° 40' N. lat. and 13° 10' E. long, about seven miles from the Sound. It is situated in the centre of an extensive plain of great fertility which produces richer crops of wheat than any other district of Sweden: tobacco and madder are also raised in it. The streets are straight and wide, and the houses commonly of two floors, and many of them surrounded by orchards and gardens. It is the residence of a bishop and a large and magnificent building of hewn stone. Lund is the seat of a bishop, and has celebrated universities. Between the cathedral and the university buildings is a space planted with lime-trees, and kept in good order. The university, erected in 1669, consists at present of two extensive edifices, the old and new one. The former, which is the larger, is three stories high, and has a tower. In the ground-floor is the historical museum; there are also two lecture-rooms. In the second floor is the library, which contains 9000 volumes, besides which there are valuable manuscripts. In the third floor is the lecture-room for mathematics, and the collection of instruments. The observatory is in the tower. The new university building contains the meeting-rooms of the senate and of the four faculties, and likewise the archives; in the second floor are the collections of natural history. The chemical laboratory is in a separate building. There is a botanical garden belonging to the university. In the building at present used for botany, there is a large museum and a botanical garden, and in the old lecture-room, the lecture-room for anatomy, with numerous preparations. Near the botanical garden is a plantation called Paradiesgårda, in which foreign forest-trees are grown for sale, and transplanted to other parts of the kingdom. The prince of Württemberg, that of Saxe, Hanover, and of the county of the Palatinate, and in 1830 to the prince of the house of the county of the Palatinate in the town, according to the census of 1825, is nearly 4000, and it is supposed that it now exceeds 4500 souls. An active commerce in the produce of the adjacent country is carried on between Lund and Malmö. (Forsell's Statistics of Sweden; Schubert's, Reise durch Schweden, Norwegen, &c.)

LUNDIN, SIR ALAN, of Lundin, or Lundie, in the shire of Forfar, was son and heir of Thomas de Lundin, who held the office of king's hostiarius, or door-ward, and in 1344 was placed in the regency of king Alexander II, with Joanna of England. Sir Alan early married the bastard daughter of this king Alexander, and before the year 1233 he had succeeded his father in the office of the youth. Before this time also he had united himself to the church, and in the spirit of the age had founded a Dominican convent at Montrose. He was a forward impetuous character, and for twelve years assumed without any authority the title of earl of Athol.

He was appointed lord-justiciar of Scotland, and continued for about six years, when he was removed under circumstances which strongly mark his audacity and ambition. In 1249 he endeavoured to obstruct the coronation of the infant son of king Alexander II; and the next year he departed to the Holy Land, and remained there till 1257, when he was again removed for the powerful Comyn. He died in 1275, leaving three daughters, who carried his great possessions with his blood into other families. For they sought Henry VI, and in 1274 the coronation of his son Edward, who was afterwards Edward II, at Westminster in the year 1307.

LUNDY ISLAND. [Devonshire]

LUNE, LUNULE, the figure formed on a sphere or on a plane by two arcs of circles which enclose a space. [Metchnikoff, Science.]

LUNE (River). [Lancashire.]

LÜNEBURG is an antient allodium of the house of Brunswick, which, in the year 1233, was raised, together with Brunswick, to the rank of a duky, and was subsequently separated, and formed a distinct principality. In the time of the house of Klettz, which was ceded to Prussia, but was indemnified by the addition of that part of Lauenburg which was retained by Hanover. It is now a landdrostei, or province, of the kingdom of Hanover, situated between 53° 15' and 53° 30' N. lat. and 10° 15' and 11° 5' E. long. It is crossed by the Elbe, which separates it from Holstein, Hamburg, and Lauenburg; on the north-east by Mecklenburg-Schwerin and the Prussian province of Brandenburg; on the north by the province of Saxony; on the south-east and south by Brunswick and Hildesheim; and on the west by Calenberg. The shape is near a square, and the area 4809 square miles. The population, according to the latest census, is 306,146. The country is on the whole an im-"
timber for building as well as fuel, for which there is a good sale. Gypsum abounds in many places; and in the vicinity of the gypsum are the celebrated salines springs. Near Lichow there is a district called Drabin, or Wendland, the inhabitants of which, in their language and manners, resemble those of the Wendish tribes of the interior of Germany. The trade road for commerce between Hamburg and the interior of Germany passes through this principality. The staple town is Luneburg, and the inhabitants expect to derive great advantages from the privilege just granted to the city by his imperial majesty, a large hold of three annual fairs. The traffic from Hamburg by way of Harburg and Celle, from Bremen by way of Celle, and from Lübeck by way of Luneburg, is not so considerable. There are no manufactures, properly so called, except at Luneburg, Harburg, and Celle. Spinning of wool and weaving of cloth abound; but the principal general among the country-people, who likewise make a quantity of wooden wares. In general the inhabitants are in pretty easy circumstances.

LUNEBURG, the capital, lying in 53° 15' N. lat. and 10° 17' E. long., is more than 10 miles distant from the Elbe, and has about fifteen miles above its junction with the Elbe, and 13,000 inhabitants. At the western end is the Kalkberg, the highest mountain in the country (about 350 feet high), on which the convent of St. Michael and some fortifications were erected in the eleventh century. About 10,000 cwt. of lime are annually procured from the Kalkberg, and exported to Hamburg and Holland. Luneburg was formerly surrounded with walls, but the fortifications are now dismantled. The principal buildings and public institutions are the university and the gymnasium. The university was founded in the vaults of which are the monuments of the antient princess, the convent of St. Michael, with a Latin school, the town-hall, the arsenal, and hospital. The inhabitants carry on a considerable trade in the products of the country, such as woolen and linen goods, hemp, flax, as well as flax-horses, of which 70,000 are annually brought hither to market, &c. There are very productive salt-works in a part of the city which is separated from the rest by a wall, and is called Kalkberg, which is situated on a salt-mine, and is a very strong, being perfectly saturated, and yields 200,000 cwt. annually, and would yield much more. We have already spoken of the transit trade from Hamburg to the interior. There are manufactories of soap, snuff, playing-cards, some breweries and distilleries, a paper-mill, &c. Of the other towns in the principality the most important are Celle (otherwise Zell), a tolerably well-built town, at the junction of the Fusen and the Aller, the seat of the supreme court of appeal; it has a gymnasium, a national stud, with 120 horses; it has six churches, besides many other public buildings and institutions. The suburbs are very extensive. On the west side of the town is a palace, with a magnificent chapel, and in the French garden is the monument of Matilda, queen of Denmark, since 1138, for the heroes of England. On the opposite Hamburg, there is a magnificent town, with manufactories of linen, woolen, and stockings, a powder-mill, tanneries, wax-bleaching, sugar-refinery, and a great trade in timber. Uezen in the Heath, near the Elbe, has 3000 inhabitants, who cultivate the best flax, and have manufactories of woolen cloth, camlets, and starch.

LUNEL. [Hrault.] LUNETTE, in fortification, is a work similar to a ravelin, or demi-lune, but generally of smaller dimensions. These works have been placed in the retired angles between the ditches of a bastion and of the collateral ravelin, but they are now usually considered as advanced works, and are placed in front of those just mentioned. The plan of a lunette is the same as that of the redoubt Y in the plan at the end of the article Fortification; and its positions may be understood by conceiving such works to be placed beyond the glacis S S on lines passing through P, Q, X, and K, and produced. Each lunette is protected in front by a ditch, beyond which is a covered-way, as usual.

The best disposition for a series of such works is that in which they are alternately more and less advanced beyond the face of the works; they afford the enemy another reciprocal defense by the crossing fire which is now directed to the nearest faces of all salient and retired lunette. And should the besiegers succeed in carrying their approaches up the glacis of the latter, the artillery on the flanks of the two more salient and collateral lunettes would effectually prevent them from forming a battery on its crest to breach the work. The operations against any one retired lunette must consequently be postponed till the two collateral lunettes are taken; whereas had all been equally advanced beyond the fortresses they might have been breached and assaulted at the same time.

To give the more advanced lunettes, which are generally those placed beyond the ravelins, all the advantages which they are susceptible, the magistrail times of their fort are to be fortified and prepared. They should have a glacis, whose base is a line joining the faces of the two collars, bastions at points above twenty or thirty yards from the Flanked angles; and to this the earthen parapets at the salients angles of the lunette will not be easily destroyed by the breach of the glacis. The lunette are defended by two or more pieces of artillery convenient placed on the faces of the bastions. The ditches of the retired lunettes should in like manner be defended by artillery placed on the faces of the collateral ravelins; and the general lines of their faces should consequently be directed towards such ravelins.

In a front of fortification of the ordinary extent (20 yards) this rule for placing the advanced lunette will permit the ditch and covered-way of the latter to be defended with a single gun. There is no fund for fortification [FORTIFICATION], and from the covered-way before the bastions, and that such fire may the bottom of the ditch of the lunette, this ought to be in an inclined place, and with the side of the glacis S S. Should the ditch so formed be too shallow to be filled up, which is the case of that of an obstacle to the enemy in his attempt to assault the lunette, it would be necessary to make it deeper and that it might not thus become a trench in which the enemy could be covered from the fire of the defenders, they should communicate with water, by which it might be filled previously to the expected assault.

The rampart of a lunette differs in no respect from that of other works; it should have the same relief, or height above the ground, and the same breadth, the face of the wall being a little sloping inwards from the outer to the inner face, as in the latter work, the fire of artillery should be capable of being directed against the trenches of the enemy at the foot of the glacis, over the heads of the defenders on the banquette of the covered-way. Its escarp should be revetted with brick or stone, in order that the enemy may be compelled to form a breach in it by artillery, or by mine, previously to making an assault; or at least that the attack be escalade might be a process of difficulty and danger. To terpein, or ground in the interior, should be high enough to allow them to throw their fire over the glacis. To prevent scaling-ladders; this part should be further protected by a loop-holed wall, or a line of palisades; it should be seen and defended from some collateral work, and an eye-post, or a subterraneous gallery, for communicators. The lunette should be covered with earth, having arms in its rear. The advanced covered-way should pass front of all the lunettes, and it might terminate at the two extremities on inaccessible ground, or in the general covered-way of the place.

Advanced lunettes about a fortress form strong posts to artillery, by which an enemy is compelled to commence his approaches at a greater distance than would otherwise be necessary. The length of their faces may be from sixty to seventy yards, and that of the glacis from fifteen to twenty yards. It is considered that a well-disposed series of these works would prolong the defence of a place about ten or two days. But they are only proper for fortresses of the first magnitude, since they would require a large garrison; and in case of their being compelled to retire, might not easily hold out in a small place.

LUNEVILLE, a town in France, capital of an arrondissement in the department of Meurthe. 156 miles as Paris in a direct line east by south, or 221 miles by road from Paris. It contains 28,660 inhabitants. This place appears to have been a mere village before the eleventh century. It afterwards became a fortified town and the capital of a county. In the war between Charles the Tenth and the English, and the French, who demolished the fortresses - Leopold, duke of Lorraine, rebuilt the castle at the commencement of the last century, and made it his residence.
LUN

A fire destroyed part of this castle, A.D. 1720, but it was promptly restored. A second fire (A.D. 1755) destroyed one of the wings, which has been rebuilt of late years. This castle was the usual residence of Stanislaus, ex-king of Poland and duke of Lorraine; it now serves as a cavalry barracks. The casements, balconies, galleries, terraces, parks and gardens have become public walks, and in the "Champ de Mars," or exercise-ground, a cavalry exercise camp is formed every year. There is a covered riding-school for cavalry, 320 feet long by 85 wide, without pillars to support it. Among men called horses.

There are three suburbs, those of Nanci, Ville, and of Alacoire. There are two bridges over the Vezouze, on which the town stands: and near the town are two others over the Meurthe, into which the Vezouze falls just below Lunéville. The parish church is a modern building of elegant architecture; the portal however is overcharged with figures and ornaments; two towers rise above the portal, crowned with statues, the one of St. Peter, the other of Michael the archangel casting down Satan. The Place Neuve (New Square) is ornamented with handsome buildings. The population of Lunéville in 1831 was 12,226 for the town, or 12,341 for the whole; in 1836 it was 12,789. The inhabitants are engaged in spinning cotton and woolen yarn, weaving woolen-cloth and cotton goods; manufacturing silk, cotton, and worsted hose; in making embroidery, pins, hats, earthenware, ironwork, and especially leather goods. There are several breweries. The principal trade is in the above articles; also in grain, wine, brandy, flax, hemp, wood, and fruit grown in the gardens round the town. There are six yearly fairs. There are several government manufactories; the air is no more polluted by them, or asylums (one of them for orphans), a jews' synagogue, and a theatre. Charles Alexander of Lorraine, an Austrian general of reputation in the middle of the last century, was born here. A treaty of peace between the empire and France was first concluded, by which the access to the town, was restored.

The arrondissement of Lunéville has an area of 466 square miles, comprehends five cantons, and 145 communes. The population in 1831 was 87,581; in 1836 it was 92,698.

LUNGS. [Respiration.]

LUNGS, DISEASES OF THE. The highly organized structure of the lungs and the incessant exercise of their important function, frequently under noxious circumstances, is the cause of many diseases of the lungs, usually looked upon as of little importance. The lungs are the organs of respiration, and their principal function is to receive and diffuse the air, so that it may be adapted for respiration.

Inflammation of the lungs (pneumonia, peripneumonia) is the result of the inhalation of particles of foreign matter, such as dust, wool, &c., which are inhaled without being noticed by the subject. This affection is generally preceded by a shorter or longer period of fever, and is accompanied by a dry cough. The pain is sometimes severe, sometimes it is described as of a dull and obscure kind and deeply seated. If the pleura, or investing membrane of the lungs, participate in the affection it is generally severe. At first there is little or no congestion in the organ rendered dull by the disease, and the spula acquire a reddish or rusty colour from the admixture of small quantities of blood. They also possess an unusual viscidity and tenacity, sometimes to such a degree that the vessel into which they are received may be inverted without their falling out: they also contain numerous minute bubbles of air, which are prevented from escaping by the consistence of the secretion. If the disease continue unchecked, the difficulty of breathing becomes much greater, and the respirations, which in the natural state are about 20 in a minute, increase in frequency to about 40 or 46. Sometimes there is little cough throughout the disease, but most commonly it increases as the disease advances, and the spula become more deeply tinged with blood. The features subsequently assume a livid appearance; the breathing gets more oppressed; expectoration is effected with difficulty; the powers of life and the patient dies from the lungs being no longer able to carry on their function.

When a favourable change takes place in the course of the disease, either spontaneously, or from judicious medical treatment, it is generally attended by perspiration, the expectoration lessens, the cough becomes easier, the tenacity, the urine becomes turbid, and sometimes there is diarrhoea. Andral and other authors are of opinion that improvement is most likely to take place at certain times—critical days. The diagnosis of this disease has received most important assistance from auscultation, and in many instances it has been detected by its aid, where formerly it would have been overlooked. The assistance afforded by the auscultatory signs will perhaps be better understood if we defer them until we have spoken of the changes of structure in the lungs occasioned by inflammation.

In the early stage of pneumonia the inflamed part acquires an unnatural density and heaviness from the unctuous accumulation of blood in it, and if a portion of lung so circumscribed is removed after death, the finger on its surface leaves an indentation which is not filled up, as would immediately be the case in a healthy state of the part. When it is cut into, a bloody frothy fluid exudes from it, and the surfaces present a deep blood-red colour, and if a portion of lung is squeezed, the finger and thumb a cracking noise is heard indicating the presence of air. In a more advanced state, the lung is found still more dense, and does not crepitate when squeezed, showing that the lung is not only thickened but consolidated, or somewhat resembles liver, and it has been termed the stage of hepatisation. When the disease has proceeded still further, suppuration may be found to have taken place. Putrid is then observed to be effused throughout the structure of the disease, the red colour, or dulness of the lung, is replaced by a yellow, straw colour, and the mass is rendered soft and easily broken. Suppuration in the form of abscesses very rarely occurs as a consequence of pneumonia. Laennec is of opinion that death most probably takes place before the change can be ended.

Auscultatory Signs.—In that stage of the disease in which there is only an accumulation of blood in the part, and whilst air is still admitted, the respiratory murmur is heard on examining the chest with the ear or stethoscope, but it is attended by a cracking sensation and a dry cough that produced by rubbing a portion of hair between the finger and thumb near the ear, or by throwing salt into the fire; this is commonly called crepito rattle, or crepitation of the chest, is perhaps occasioned by pus escaping into the larger air-tubes.

Treatment.—The treatment of inflammation of the lungs must be conducted on the same general principles as inflammation occurring in any other part. The important nature of the secretions to be removed, and the necessity for their removal, sometimes to a very large amount, and on repeated occasions. Antimonials and mercury are also highly useful in this affection. Indiscriminate use of antimonials is confined to the bronchial tubes, and is called bronchitis; it may also co-exist with pneumonia. [Bronchitis.]

Mortification or gangrene of the lungs, though sometimes occurring as a result of pneumonia, most frequently takes place as an independent affection. Great fetor of the breath, with an expectation of dark brown, greenish, and
feud spita, excessive dobbity, and a cadaverous expression of concomitance, are the symptoms by which it is indicated. After death portions of lung are found in a partially decomposed state, of a dark brown or dirty greenish appearance, and a sour smell. Occasionally, under favourable circumstances, the mortified parts have been separated and removed by expectation, and the patients restored to health; but this is not a result which can commonly be looked for. It has been known to occur sometimes as a consequence in certain cases of long exposure to the noxious effulvia attendant upon such occupations.

*Hemoptysis; Spitting of Blood.*—Expectoration of blood may occur either by exhalation from the mucous membrane of the air-tubes damaged from the lesion of a blood vessel, or by the expulsion of blood by the action of the previous pressure, which may likewise contribute to produce it. Sometimes it appears to be dependent upon an altered condition of the blood itself, as in purpura and some eruptive fevers; but its most frequent cause is tubercular disease of the lungs, in which it is produced by the obstruction of the circulation occasioned by the tubercles, or subsequently from the vessels participating in the ulcerative destruction.

A remarkable sympathy has been observed to exist between the uterus and the organs of respiration, and spitting of blood has sometimes been known to precede the appearance of the menses, and to cease entirely on their accession. Sometimes it has been found to supersede the discharge altogether, or to make up for a deficiency in its quantity.

An attack of hemoptysis is usually preceded by certain premonitory symptoms, such as chilliness, headache, lassitude, and a quick and vibrating pulse. The patient also experiences a sensation of weight in the chest, with a feeling of heat and itching in it. The expectoration of blood is attended with cough. Sometimes the quantity brought up is very considerable, and is expelled with violence; at other times the sputa are only streaked with blood. In the expectorated blood there is a bloody colour, and, in small quantities, it is frothy and mixed with air. When the blood comes from the stomach, it is brought up by vomiting and without cough, without the bloody appearance, and is of a viscid homogeneous character.

**Pulmonitis.**—When it happens that the blood, instead of being exhaled into the air-tubes, is diffused into the parenchymatous structure of the lungs, the name of pulmonary apoplexy is given to it. One or two lobes, or a portion of the deposition of small granular aëri of a grey or bluish white colour, called tubercles, in the structure of the lungs. By coalescing these smaller bodies acquire some-

times the size of a bean, or even of a filbert, assume a light yellow colour, and become something like cheese in consistence. They may exist in a quiet state for a long time without materially affecting the health, but subsequently they become more active, soften, and give rise to abcesses (vomica), which increase and produce death either by suffocation or by wearing out the powers of the constitution.

For a more extended account see article Pulmonitis Pulma.
Lutetia

is still continued in the Chapel Royal, though the place is a sincere. The derivation of the word seems to have perplexed many who have sought its etymology; but is, we have no doubt, to be traced to the Teutonic *Lut*, where it is made use of, and now signifies "the wild beast". It was not a separate constellation, but was carried in the right hand of the Centaur towards the Altar. The same description is given by Hyginus. In modern maps it is represented as a wolf transform'd into the figure of the Centaur. It is situated between Centaurus and Ara, directly under Scorpius.

The principal stars are as follows:—

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LURE. [Sæone Haurte.] 

LURÍDA, a name given by Linnaeus to one of his natural orders of plants. It is equivalent to Solancese of modern botanists.

LUSATIA. [Laustitte.]

LUCIGNIAN. [Cyprian.]

LUSITÁNIA. [Portugal.]

LUSTRUM was the name applied to a period of five years among the Romans; and the termination of this period was generally marked by great religious solemnities. A public sacrifice, called *lustri*, was usually offered at this time by one of the censors in the Campus Martius (Liv., i. 44); and the victims consisted of a cow, a sheep, and a bull, which were led round the people three times, and then slain; but this sacrifice was sometimes omitted on certain occasions (Liv., iii. 186). (Lustri, L. Ling. Lat., v. 2) derives the word from *lustère*, because the farmers paid their taxes at that time; but others, with more probability, trace the etymology to the purifying sacrifice which was then offered.

It is well known that the most antient Roman year consisted only of 10 months, or 304 days, and that this year continued to be used for religious purposes. Niebuhr, in his *History of Rome*, has shown that the *lustrium* was the period, after which the beginnings of the civil and religious years were made to coincide; since 5 solar or civil years of 365 days each, containing 1825 days, coincide with 6 religious years of 364 days each, containing 1824 days, with the difference of one day.

In the time of Domitian the name of *lustrium* was given to the public games which were exhibited every fifth year in honour of the Capitoline Jupiter. (Sueton., Domitian, c. 4.) The poet frequently used the word for any space of five years (Hor., Od. ii. 4, 24; iv. 1-6), and sometimes conduced to denote a period of time as in Latin (Od. iv. 45, 46) or Greek (Isocr., Stad., c. 26) as a space of four years. (Ovid, Pont., iv. 6-5; Martial, iv. 45.)

Niebuhr's *History of Rome*, vol. i., pp. 270-280, Eng.; Creuzer's *Abriß der Römischen Antiquitäten*, p. 149; and the article Censor in this work.

LUTE, a musical stringed instrument with frets, one of the numerous varieties of the ancient cithara. Till towards the end of the seventeenth century its practice formed an essential part of a good education, but it has since been partially superseded by the guitar: nevertheless the salaried office of

Mr. Bailey makes this star to be β of Bayer, and the next A.
In 1517 Pope Leo authorized by a bull the sale of indulgences in Saxony and other parts of Germany, as his predecessor Julius II. had done in France, Poland, and other parts, nominally for defraying the expenses of building the new church of St. Peter's, and also for supporting the Pope's war against the Turkish pirates of the Black Sea, which threatened to prevent this further little of the money derived from the sale was employed either purpose. [Leo X.] The practice of selling indulgences had existed for some centuries before Luther. For the original doctrine and practice of the Church on the matter see C. A. C. d. H., 90. In the papal bull for admission to the sale in Saxony to Albert, elector of Mainz and archbishop of Magdeburg, who appointed Tetzel, a Dominican monk, his quasario, to preach and sell the indulgences through the country. Tetzel appears to have executed his mission with the greatest rapidity, and to have been no member of the Church could have his war, and his opinion of his unimportant and credulous customers by the most absurd exaggerations, and going far beyond the received doctrine of the Roman canonists of the power of the keys. In 1512 Luther was made dean of divinity, and elected, bishop of the university, the usual jovial careless disposition of a German student. In 1505 an accident occurred which altered the current of his thoughts. One of his fellow-students was killed at his side by lightning, and Luther from the most learned a monk to become a monk. On the 17th of July in the same year he entered the Augustinian convent at Erfurt, carrying with him only a Virgil and a Plautus. His father was at first averse from this resolution; but after two years he consented, and was only those who were the last to do so. Luther's retirement of his convent Luther was tormented by temptations and religious scruples and doubts, which he had pathetically described, especially on the subject of faith and salvation. In 1507 he left the convent, and spent some time in Italy on business concerning the order, a circumstance which brought about a crisis in Luther's life. He proceeded to that country, which he looked upon as the centre of Christendom, with his heart full of spiritual hopes and devout expectations. He was delighted and surprised at what he saw there. He found pomp and pride, gross sensuality, hypocrisy, and treachery, as he tells us, even in the convents which were his halting-places on the road. He told the monks at Milan that they ought to fast on Fridays and wear mourning clothes. His ideas were also affected by these occurrences; he fell ill at Bologna, and was confined to his bed for some time. Having recovered, he continued his journey to Rome, and on his arrival repaired to the convent of his order near the gate Del Popolo. There, on the first blood of martyrs, he hurried to the various sanctuaries with which the capital of the Christian world abounds; but on looking to those around him, the inmates of the Holy City, and the face of the city itself, he found grief, what many a young enthusiast has experienced before and since on entering the world, that names and realities, professions and practice, are quite different things. Luther was in fact single in his faith and his religious fervour. Rome at that time, after having been affected by the scandalous conduct of Henry VIII., was ruled by the choleric and warlike Julius II., who represented the church militant upon earth, and who was then busy about his schemes of humbling Venice and driving the French out of Italy. His cardinals were able despots, in the service of the world, and better acquainted with Cicero than with the Bible. In visiting the churches, Luther was shocked at the indecent hurry with which the priests went through the service of the mass, and at the blaspheinous jests which he sometimes heard, as well as at the presumption of the people and their rulers. Luther remained only a fortnight at Rome: he hurried back to his native Germany with his head bewildered, his feelings disturbed, and his religious belief greatly shaken. He used to say however, in after-years, that he would not, for one hundred crowns, have missed that journey to Rome, for without it he should have been tormented by the fear of being unjust towards the pope during his subsequent controversy with the papal powers.

In 1512 Luther was made dean of divinity, and Frederic, elector of Saxony, called the Wise, defrauded the expense of his inauguration, which was celebrated with splendour. The reputation of Luther had spread as that of a learned divine and popular preacher. He was well acquainted with scholastic learning, and tolerably so with the classics. He knew Greek, but very little Hebrew he had, above all, deeply studied the Scriptures, which was not a common attainment among ecclesiastics in those days. He was real and earnest, devout in his thoughts, and irreproachable in his morals. In his own order he was appointed provincial vicar of Misnia and Thuringia, in which office he evinced much zeal for the maintenance of discipline and piety in the various monastic houses of that province.
by Dr. Maclaine in a note to Mosheim's "Ecclesiastical History," and the insinuation was never broached during Luther's lifetime by his most inveterate enemies. In fact the traffic in indulgences had fallen into contempt among the clergy, and the Franciscan friars themselves refused to have, which he did not.

In the year 1518 Eckius, a professor of divinity at Ingolstadt, took up the controversy against Luther, who answered him, and thus increased his popularity and the number of his adherents, whilst at the same time the warmth of debate carried on at Wittenberg mainly consisted upon the abstruse subjects of free-will and the means of justification. Still it appears that Luther had as yet no intention of separating from the Roman Catholic Church. In May, 1518, he addressed a missive letter to Leo X., in which he defended the divine inspiration of the Holy Scriptures, his holy father; call or recall me, approve or condemn me as you please; I shall acknowledge your voice as the voice of Christ, who presides and speaks in your person." Leo summoned Luther to appear at Rome in sixty days, and there to plead his own cause; but the elector of Saxony interposed, and obtained permission for Luther to be examined within the bounds of the empire, and to be judged by his ecclesiastical laws. Cardinal Caietano, of the order of Dominicans, and a member of a monastery, was chosen to examine him. Luther, accompanied by Stupitz and another friend, rejoined to Augsburg, in October, 1518, and was received by the cardinal with courtesy; but instead of arguing the point with him, the cardinal assumed an imperious manner of pontifical domination. Luther, to his great surprise, was asked to what pope so willed it, and how could he, Luther, a single monk, expect to be able to cope with the pope? (Luther's Letter to Spalatin, chaplain to the elector, and his friend, dated Augsburg, 15th October, 1519). Luther's reply to the cardinal's orders could pretend to infallibility, and that St. Peter himself had erred. In one of these interviews however the cardinal was insensibly drawn out from his high ground, and entered the field of controversy, but it would appear he submitted to the unanswerable arguments of Luther. He considered the novel doctrine of justification by faith and by faith alone. In the end, Luther, thinking perhaps of the fate of John Huss, suddenly quitted Augsburg, leaving behind an appeal to the pope 'better informed.' In November, Luther spoke of those who had repented and were in the world of grace, whether they be alive or dead. On the 25th November, Luther appeared to the pope from a general council of the church.

Meantime the cardinal legate was urging the elector of Saxony to expel Luther from his dominions. But the elector of Saxony firmly separated from the pope, and the newly founded university of Wittenberg, would not consent, and the emperor Maximilian I. having died just at this moment, Frederic, as hereditary vicar of the empire during the vacancy, was a person too important for mere vows, and also to Leo. The tides of the concordat gave the elector a new legh, a Saxon, named Miltitz, a man of sagacity and prudence, to endeavour to bring Luther to a reconciliation. Miltitz had a conference with Luther at Altenburg, in the beginning of 1519, in which he agreed with Luther in condemning the abuse made of the indulgences, and was thus the流产 of blame of it on that monk's ignorance and profligacy, and so far conciliated the warm but generous spirit of his antagonist as to induce him to write a missive in which he acknowledged that he had carried his zeal and animosity too far, and promised to observe in future a profound silence upon the matter in debate, provided his adversaries would observe an equal temper; further protesting that he feared no man of inferior rank to that of Christ, and that he would always cheat the people to honour the Roman see, which he had as his writings endeavoured to clear from the impious exaggeration of the questioners. This letter, says Beauchore, is 'the bond of human weakness,' for Luther had already appealed from the pope to the council. Luther's vacillation however may be easily accounted for by reference to the old established reverence for the papal see, the reminiscence of his own early impressions and education, and of his solemn oaths and promises. In the State of Saxony the conviviality and cordial familiarity of his intercourse with Miltitz, It appears that Leo himself wrote to Luther a very mild and conciliatory epistle, published by Loecher in his Untschuld Nachrocht, 1742. Miltitz had other conferences with Luther at Leutenweder and Lichtenberg, which gave great hopes of a full reconciliation, when the polemic intemperance of Luther's personal adversaries widened the rupture and brought the dispute to a crisis. (Seeckendorf, Commentarius Histor. de Lutheramismo.)

Eckius challenged Carlstadt, one of Luther's disciples, to a public disputation at Leipzig, concerning free-will. It was then that the term Co-operator was first used to designate our natural liberty is not strong enough to lead us in the path of good without the intervention of Divine grace. Eckius asserted that our natural liberty co-operates with divine grace, and that it is in the power of man to consent or dissent from the results of this combination. Luther, who was the best of the argument on his side, when Luther, who had repaired to Leipzig, entered the lists against Eckius, by preaching in the chapel of Duke George's castle a sermon calculated to draw the hostility of Eckius against himself. Eckius, in fact, immediately selected from Luther's works thirteen propositions, which he met by as many counter-propositions. One was concerning the supremacy of the Roman see. Eckius maintained that the church of Rome was an assembly of clerics, and that Luther in his disputation with the Roman church had erred. Luther admitted this, but contended that the see was not other than Jesus Christ. The long acknowledged supremacy of the pope, he observed, extended only to the Western church, and he maintained that it was not jure divino, but founded in a universal consent and a general concord of all the Christian churches, and by a benefaction of God. Thus Luther then, and he subsequently redressed several ecclesiastical bodies, the rector of the university of Leipzig, who had been appointed judge of the disputation, refused to declare to whom the victory belonged, and the decision of the matter was reserved to the courts of Paris and Erfurt. Luther however went on publishing several works, 'On Babylonian Captivity,' 'On Christian Liberty.' &c., in which he openly attacked the doctrines and the authority of the church of Rome. Leo now assembled a congregation of cardinals, before which the works of Luther were laid, and by whose advice a bull of condemnation was drawn up against Luther, and published on the 15th of June, 1520, in which forty-one propositions, extracted from his writings, were declared heretical and absolutely condemned; his writings were ordered to be publicly burned, and himself was summoned to confess and retract within the space of sixty days, under pain of excommunication. Luther having again appealed to the general council of the church, the pope decided in his condemnation, by burning on a pile of wood, without the walls of Wittenberg, in presence of a vast multitude of people, Leo's bull, and also the decrees and canons relating to the pope's supreme jurisdiction. This was done on the 10th of December, 1520, and on the 6th of the following January the pope launched a second bull against him, by which Luther was expelled from the communion of the church for having disowned the supremacy of the Roman Pontiff.

Luther having now irrevocably separated from Rome, went over to the side of the new and rising movement of the Reformation, and was at once made an exemplary punishment of Luther as an obstinate heretic. At the same time Leo urged the new emperor Charles V., in this character of his and defender of the faith, to make an exemplary punishment of Luther as an obstinate heretic. But Frederic, the elector of Saxony, employed his influence with Charles to have Luther's cause tried by a diet of the empire, which assembled at Worms, in April, 1521, in presence of the emperor.

Having obtained the emperor's safe conduct, he repaired to Worms, and was met by multitudes outside of the town. On entering he began singing the hymn 'Our God is a strong citadel, which became known as Luther's hymn, and the inspiring song of the Reformation. On 17th April Luther appeared before the emperor, the electors, bishops, dukes, margraves, and other princes and lords assembled, and being asked whether he was the author of the books now produced, in which the propositions condemned by the pope were contained, he answered in the affirmative. Being next asked whether he would retract or maintain them, he begged
for time to consider of his answer, and was allowed one day. The following day he appeared again before the assembly, and said that his writings were of various character, that in some he had treated only of Christian faith and pietry, and that in some he had exposed the inventions of men and the usurpations of the popes, and these he could not retract; that in others, which were directed against the defenders of the pope, he made not any thing himself in an unbecoming manner, but that he could not retract the substance however conspurable the manner of it; that, being a man, he was liable to error, and that he was ready, if convicted by the testimony of the Scriptures, to commit a part of the whole of his writings.

And he repeated what he had already said on another occasion, that both pope and council were liable to error, and had in fact often erred. He had formerly quoted the council of Constance as an instance of his assertion.

On the following day Charles V. told the diet, that attached as he was to the Roman Catholic church, he should ever defend its doctrine and constitution, that he could hear Luther no more, and that he should dismiss him, and afterwards treat him as a heretic. This decision was also that of the majority. Some were for trying persuasion and entreaty with a man who, like Luther, could not be frightened into submission; but entreaty was likewise of no avail, for Luther refused to retract a single proposition unless punished by the authority of the Sacred Empire. He was then ordered to leave Worms, with a written promise of security for twenty-one days. He left on the 26th of April, but on entering a forest his carriage was stopped by a party of armed horsemen in masks, who placed him under arrest, and conducted him with great violence to Wartburg, situated on a mountain. This was another contrivance of his kind protector the elector of Saxony. The greatest secrecy was observed concerning the place of his retreat, and a party was put in charge about seeing that what had carried him off. A month after his departure an imperial edict appeared, placing Luther under the ban of the empire, ordering him to be seized and retained in prison at the emperor's pleasure, and imprisonment and confinement were pronounced against every one who asked or abetted him. But the edict could not be enforced. The elector of Saxony was Luther's friend; few, if any, of the other electors or princes were his enemies, and the popular voice was for him: the Germans in general, although few of them understood the subtleties of the Quaran polemics, were weary of the abuses and encroachments of the ecclesiastical power.

In his asylum at Wartburg Luther wrote several treatises against auricular confession, against monastic vows, clerical celibacy, and for the decrees of the Council of Trent at Pans, which had condoned his works, and which he exposed to public ridicule. His writings spread and produced a wonderful effect in Saxony. Hundreds of monks quitted their convents, and married. The Austin friars of Wittenberg abolished the mass, and were the first to publish the Bible. He also affected to obey to the letter the sentence pronounced on Adam by going to work in the fields for some hours daily. Even the polished Melnhelm followed the example, and went to work in a baker's shop.

Luther, in a letter, board of these follies; he perceived that fanaticism was spoiling his cause, and he resolved immediately, without heeding his own danger, to return to Wittenberg (1522). He exhorted Carlstadt, who retired, calling him an idiot because he believed in the doctrine of the sacrament of the altar, to remain on terms of intimacy with princes. At last they parted in anger; Carlstadt was banished from Saxony as a vicious person by the elector, for inculcating the principles of natural equality, and he went to join Zuingle in Switzerland.

Luther was now the acknowledged leader and oracle of the reformers of Germany, and as such he continued to the end of his life. The doctrines which he gradually asserted, and which were expanded and fixed by his disciple Melcheruon, in the Confession of Augsburg, are stated in the article LUTHER. Luther of 1522; he published his German version of the New Testament. In 1523 he preached against the mass. He had already replied in his usually scurrilous style of polemics to the treatise in defence of the sacraments written by Henry VIII. of England. It must be observed however that the coarse invectives which shocked the reverence for the mass after Luther down to the seventeenth century, and traces of it are found in writers of the eighteenth, even in some of the works of the polished and sturdy Voltaire.

Luther'sittenwas a man of great erudition, and decisively condemned monastic institutions. Converts, both of men and women, were now rapidly suppressed through North Germany, and their property was seized by the secular power; indeed there can be no doubt that the hopes and expectations of great princes and electors gave to the new doctrines. The direction of the wiedertaufer, or anabaptists, led by a fanatic named Muntzer, which assumed the character of a popular war against all property and law, gave great concern to Luther, who was induced to undress the source of which all those aberrations flowed. He preached against fanaticism, he tried to mediate, he besought the peasants to lay down their arms, and at the same time he told the princes to redress the grievances of the poor, but the matter of the check on waste and devastation, and nothing but the sword could put a stop to it. Luther was sorely grieved throughout the rest of his life at the renewed disorders of the anabaptists and other fanatics on one side, and on the other at the selfishness of princes and nobles, and at times that the end of the world must be near, for the world had fallen into decrepitude; avidity and self-interest were the ruling passions. (Luther's Table Talk; and Letters.)

In 1525 Luther married Catherine de Bora, a young girl who had left her convent the year before. He had long before condemned the obligation of clerical celibacy, as well as that resulting from monastic vows, as being human. In short, he had declared against the "reign of purity," he wrote, 'is a state of simplicity and peace.' While Luther married he was poor, for amidst the great class from the old to the new system of church discipline, no salary, which was charged upon the revenues of monks and nuns, was paid to a clergyman. Luther was not a man to ask money of his friends. In the same year his steady and considerate patron Frederic of Saxony died, but John, his successor, not only continued to favor Luther, but made open profession of his doctrines, and introduced them into his dominions, in addition to which Luther wrote a larger and a small catechism for the use of schools, in a style adapted to youth. Besides the elector of Saxony, the Duke of Palatine, the landgrave of Hesse, the Duke of Cleve, and the Electors of Brandenburg, Philip, Emmanuel of Hesse, and also many cities in other parts of the empire, embraced Luther's reformation. In Switzerland however another reformer, Zuingle, who had begun, like Luther, by opposing indulgences, had also effected a reformation, but the old institutions were preserved. Luther was opposed to those of Luther, especially on the subject of the real presence in the sacrament, which Luther admitted, and Zuingli entirely denied. Luther was exiled at this division, esp. by the several towns of Germany, Strassburg, Ulm, Meiningen, Lippstadt, and others, and was compelled to live in tenements. In March, 1529, a diet was convened at Speyer, in which the Catholics endeavoured to enforce the edict of Worms, property, by no means particularly poor, and Luther, as those of Luther, especially on the subject of the real presence in the sacrament, which Luther admitted, and Zuingli entirely denied. Luther was exiled at this division, esp. by the several towns of Germany, Strassburg, Ulm, Meiningen, Lippstadt, and others, and was compelled to live in tenements.
protestation arose the name of "Protestants," which in its origin was applied to the Lutherans.

The landgrave of Hesse, wishing if possible to bring about a union among all reformers, succeeded in appointing a conference between Luther and Melancthon on one side and Zuingli and Calvin, and others, on the other. The conference turned chiefly on the subject of the real presence, but it produced no approximation among the opposite parties. They separated neither in friendliness nor hostility, but both parties retained their favourite tenets.

In the midst of a diet which was attended by Dr. Melancthon, J. C. Althaus, who attended it in person, and there the Lutherans presented their confession of faith, which was drawn up by Melancthon and approved by Luther. (Augsburg, Conv.

In 1534 Luther completed his greatest work, the German version of the Bible, which is much admired for its elegance, force, and precision, and which has rendered the Scriptures really popular in Germany.

The remaining years of Luther's life were passed in comparative quiet, chiefly at Wittenberg, in the duties of his professorship, in writing religious and controversial tracts, and in epistolary correspondence. He was consulted by the Protestant princes and clergymen on all important matters, and was frequently invited to attend the parliaments of Nuremberg and Strasburg, and with deference he consented to speak against human authority, did not for a moment admit of any doubts concerning the truth of revelation. The question between Luther and his antagonists is therefore of material importance chiefly to Christians.

To those who do not believe in Christianity it may appear of little consequence what Christians do believe, or how and whence they derive their belief; but even in a social point of view it is of some importance to decide whether in spite of multitudes of men, the Bible, and the appeal to the scriptures against human authority, did not for a moment admit of any doubts concerning the truth of revelation. The question between Luther and his antagonists is therefore of material importance chiefly to Christians.

Those who judge of Luther's disposition merely from his controversial style and manner greatly mistake his character. He was a warm-hearted German, kind and generous; he abused and vilified his antagonists the more in proportion as he was the stronger, and he felt no shame in confessing their errors, even when they were his former friends. He was a Unitarian in faith: he confounded religion and morality, and he pleaded unceasingly for the education of the labouring classes, broadly telling princes and rulers how dangerous as well as unjust it was to keep their subjects in ignorance and degradation. He was no courtly flatterer: he spoke the truth in season and out of season.

Luther gave that impulse towards spiritual philosophy, that thirst for information, that logical exercise of the mind, which has made the Germans the most generally instructed and the most intellectual people in Europe. Luther was converted by a religious education and experience. He believed in the Bible, in God, and the op- pression, and against the high and mighty, even of his own party, who were guilty of cupidity and oppression. Luther's doctrine was altogether in favour of civil liberty, and in Germany it tended to support constitutional rights against the encroachment of power.

Luther's moral courage, his undaunted firmness, his strong conviction, and the great revolution which he effected in society, place him in the first rank of historical characters.

Luther's works, which are multifarious and voluminous, partly in Latin and partly in German, have been repeatedly published. The greater part of that which was published between 1520 and 1535, constitutes the "Spiritual Exercises," and is the book he considered his greatest work. It comprises the entire of the works of Luther, and is remarkable for its practical spirit and for the vast number of topics he was accustomed to write on. Luther was a sincere and zealous believer in the Christian Revelation. Luther considered religion as the most important business of man, and because he considered it as such, he wished to ascend to its very source unalloyed by human authority. He contended for the right of every man to consult the great book of the Christian law; but although he insisted upon his own interpretation of particular passages of the scriptures, the principles of free inquiry which he introduced led to further results, and gradually established that liberty of conscience which now exists in the Protestant states of Europe. Luther's views with regard to the scriptures against human authority, did not for a moment admit of any doubts concerning the truth of revelation. The question between Luther and his antagonists is therefore of material importance chiefly to Christians.

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this time (February, 1839) forms a subject of dispute between Holland and Belgium. The line of the Netherlands became the boundary of Luxemburg by the arrangement of the Congress of Vienna, and as such a member of the Germanic Confederation. [BELGIUM.] Luxemburg is bounded on the east by the Prussian Rhenish provinces, on the north by Liege, on the west by Namur, and on the south by the departments of the Moselle and Ardennes. Its greatest length from east to west is 75 miles, and its greatest breadth is 50 miles; its area is 690,000 hectares (equal to 1,700,000 English acres), or 2656 square miles, distributed as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hectares</td>
<td>211,000</td>
</tr>
<tr>
<td>Arable land, plantations</td>
<td>240,000</td>
</tr>
<tr>
<td>Heaths and commons</td>
<td>127,000</td>
</tr>
<tr>
<td>Uncultivable land, marshes &amp;c.</td>
<td>86,740</td>
</tr>
<tr>
<td>Roads, &amp;c.</td>
<td>73,760</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>690,000</strong></td>
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The principal rivers of Luxemburg are the Moselle, which for twenty-five miles forms the boundary between this province and Prussia; the Sûre, an affluent of the Moselle, and also a boundary through part of its course between this province and the Grand Duchy of Luxembourg; the Our and the Elze, a little stream which fall into the Sûre; the Semois, which rises near Arlon, and, flowing first to the west and then to the north, falls into the Moselle; the Ourthe, which rises near Bastogne, and falls into the Moselle near Liège; the river Our, which rises near Nœuffin, and falls into the Meuse near Dinant. There are several small streams, which have the appearance of rivers only when swollen by rains.

Luxemburg is crossed from the south-west to the north-east by a range of high ground, part of the Ardennes, which separates the valley of the Meuse from that of the Moselle. This range has a mean elevation of 1800 feet above the Meuse at Liège, and 1640 feet above the level of the Moselle on the French frontier. The soil of this elevated region is calcareous, which character extends on both sides of the range, and forms a band about 25 miles wide, which is principally occupied as pasturage. The lower lands, which are commonly called the good country, are very productive, and yield abundant harvests of wheat and rye, as well as flax, hemp, mugel-wurzel, and all kinds of legumes. Such of the high lands as are applied to arable cultivation rarely yield anything but rye, oats, and potatoes. Luxemburg contains many woods of large growth. The agricultural produce is said to be the best in that part of the Netherlands. The vine is cultivated on the banks of the Moselle and the Sûre; and in 1837, the most abundant vintage on record, there were produced 25,563 hectarins, or 16,476 gallons of a good quality of wine of the district is inferior. In the same districts are upwards of 2000 distilleries, nearly two-thirds of which have been established since 1832. The quantity of spirit distilled in 1837 was 4,116,420 gallons, from which it is evident that the establishments are generally upon a very small scale.

At the beginning of 1833 there were in the province 32,585 horses, 122,288 horned cattle, and 167,532 sheep; and in the course of that year there were exported 5 horses, 172 horned cattle, and 226 sheep and lambs. The area of these animals was 34,621 acres. There are from 1900 to 2000 hogs, of the number of which no account has been taken; they must however be very numerous, as there is scarcely a family in the province who does not keep a sow and eight or ten pigs. The branches of industry, not agricultural, pursued in Luxemburg, are distilling, for the use of iron-works, slate-quarries, potteries, tanneries, cloth-mills, and paper-mills. The quantity of iron made is about 9000 tons in a year, the ore for which is found in the eastern and western parts of the province. The coal employed is mainly wood-charcoal. Luxemburg contains lead and copper. At Stolzemburg, a village about seventeen miles north of the city of Luxembourg, a copper mine was worked in 1749, 1764, and 1756, and in 1772 was abandoned as being exhausted. There is a lead- workings in the town of Longwy, near Bastogne, but the produce is not great.

Luxemburg is less densely peopled than any province of Belgium. The number of inhabitants, at the 1st of January, 1837, was 322,215, of whom 15,693 only were living in towns, and 306,526 in rural districts. In 1836 there were born in the towns 292 male and 253 female children, and in the country 5678 male and 5449 female children; all together, 11,752. The number of deaths in that year was, in towns 231 males and 194 females, in the country 3568 males and 3408 females; all together, 7421. It appears from an authentic document that the population of Luxemburg in 1841 was only 95,028 souls. In 1784 there were, in the towns of Luxembourg, Arlon, and Echternach, 12,874, and in the rest of the province 211,220 inhabitants; all together, 224,094. In 1817 there were only 213,597 souls, but since that time the increase has been very considerable. When the population was 305,654, there were 302,212 Catholics, 68 Protestants, and 335 Jews.

The moral condition of the inhabitants is said to be superior to that of any province in Belgium, a fact which is explained, if not attributed, to the small number of the population and the extent of the land, which is such as to make proprietors of the majority of the labouring people. To these causes may be added the absence of wealth and consequently of temptation to commit offences against property, which form the great majority of crimes among the other provinces. The tribunal is richer and more densely peopled communities. The province does not contain any considerable libraries or museums of natural history. Some ancient cities, in former times possessed considerable collections of libraries; others, at the present day, are either entirely destroyed or have been scattered among the inhabitants. In the city of Luxembourg there is now no collection that would be considered remarkable if possessed by a private person.

The youths of Luxembourg have no college within the province which they can attend, and are accustomed to go for instruction to Louvain, to Liege, and to Paris. There were in 1833, in all Luxembourg, 779 primary schools, attended by 39,114 scholars of both sexes. The number has increased since that time, and every village or hamlet has its primary school, the teacher of which is chosen by the heads of families.

The city of Luxembourg, the capital of the province, is a fortress of great strength, in 49° 37' N. lat. and 5° 45' E. Long. There are, in the town, 13,834 inhabitants, and about 25 miles south-west from Treves, and 100 miles south-east from Brussels. The city is surrounded by strong walls and deep ditches, and has a double line of outworks in the form of a heptagon. It is small but well built, has 4,500 houses, and contains a good hospital. Other towns of the province are St. Hubert in the Ardennes, formerly the seat of a rich Benedictine abbey, and a place of pilgrimage, with 1500 inhabitants; Houillon, the capital of the duchy of the same name [BOUILLON]; Neuchâtel, in a wild district of the Ardennes, with 1200 inhabitants; Bastogne, in a plain in the Ardennes, with 2400 inhabitants; Diekirch on the Sûre, with 2500 inhabitants; and Grevenmacher, in a pleasant country on the Moselle, where a considerable quantity of wine is produced.

LUCERNE. [Eighth. THEBE.] LUEZEN (Luzerne in French), a canton of Switzerland, bounded on the north by Aarau, on the east by Schwyz and Zug, on the south by Unterwalden, on the west by Bern, and running north-west from Thun to south, is 33 miles in length and its greatest breadth 27. Its area is reckoned at 657 square miles. The declivity of the valleys is towards the north-east and south-west. The southern part of the canton belongs to the district of Lucerne Schüpfen; the northern part to the canton of Thun; the lake at the town of Lucerne, and flows in a north-east direction into Aarau. Below Lucerne the Reuss is joined by the Wald Emme, which rises at the south-west extremity of the canton, runs northward through the fine district called Lucerne, and then flows north-east until it meets the Reuss. A succession of high grounds, running across the middle of the canton, divides the basin of the Reuss from that of the Aar, to which latter river the northern part of Lucerne belongs. The Sihl river flows out of the Sempach lake, which is in the centre of the canton, and runs northward towards the
The Wigger rises in the centre of the canton, south-west of the lake of Sempach, and runs northward into the Aar. North-east of the Sempacher lake is another and smaller lake, called the Baldegger lake, from which a stream runs into the Halwyler lake, which is in Aargau, but to the south of the lake of Berne, and from which a river runs into the Aar. The only mountain-range in the canton are the southern extremity, on the borders of Unterwalden and the Bernese Oberland. None of them attain the limits of perpetual snow. The highest is Mount Pilatus, south-west of the belt of Luzern, and a capping rests on it in its landscape. It is a mountain-group nearly thirty miles in length, extending along the borders of Luzern and Unterwalden, and having seven peaks or summits, called Eol, Oberhaup, Band, Tomlishorn, Gemmäitli, Widderfeld, and Kappelbruck in Luzern. The altitude of 6,678 feet are the highest summits. The name of Pilatus is said to be derived from the Latin word 'pileatus,' because the mountain-top is often covered with clouds as with a hat.

The local legend of the peasantry derives it from Pilate, the governor of Judaea, who is said to have wandered into Helvetia, and to have drowned himself in lake Luzern on this mountain. It is also called Fracmont, 'Mons fractus,' because its sides, especially towards Luzern, look broken, craggy, and inaccessible. The southern side towards Alpnach in Unterwalden is less abrupt, and belongs to the canton of Lucerne. Fruit-trees are also abundant; the vine is cultivated only in some favourable situations. The rearing of cattle is the principal occupation, and captured on the canton, especially in the Entlibuch. In some districts of the canton are manufactory of linen and cotton goods. The trade between Switzerland and Italy by the St Gotthard employs a number of people, and all the goods pass through Luzern and Lucerne.

The population of the canton in 1836 was 123,407 inhabitants, of whom only 3585 were natives of other countries. They are exclusively Catholic. German is the language. Under the former system Luzern was a municipal aristocracy, the magistracy being in the hands of the citizens of the head town. In 1831, the country people having strongly remonstrated against this arrangement, a new constitution was framed, by which all the citizens of the canton, of the Catholic faith, being above 16 years of age, and having a property of 600 francs and above, are entitled to elect the council and the cantonal council, and elect the town council of Luzern and Lucerne, and be themselves elected of the canton.

The public revenue of the canton is 367,642 Swiss francs (the Swiss franc is one franc and a half of French, worth about 72 pence sterling), and the expenditure 347,300 francs. The monopoly of salt, which is in the hands of the government, as in most Swiss cantons, brings in 102,000 francs to the revenue; the obol, or tax on the vineyards, 115,000 livres; the postages 24,000; the tolls 17,000; and the duties on foreign goods, 14,000 francs. The administrations and other ecclesiastical foundations are assessed amount to 18,425 livres. The abbey of Müllingen, or Beromünster, housed in 850, and the convent of St Urban, are amongst the wealthiest in Switzerland. Luzern is in the diocese of Basle, which resides in St Gallen.

There are in the canton 165 primary or elementary schools, and 16 secondary or grammar schools, a seminary for teachers, a gymnasion, a lyceum, and a polytechnic institute.

Luzern, the town of, is situated at the western ex-

Lycia.

The northern part of Lycia was united, but at what time is uncertain, to Galatia; but the southern part was VOL. XIV. - 2 E
LYCIA. Sabiny's name for a genus of crustaceans, which M. Desmarest views as coming very near to the genus Miersia of Leach.

LYCIA (Asia), a province of Asia Minor, was bounded on the north by Phrygia, on the east by Pamphylia, on the west by Caria, and on the south by the Mediterranean Sea. The interior of this country is generally unknown to the recent visit of Mr. F. (1838), who travelled a considerable distance into the interior, and made many interesting discoveries, which will be shortly communicated to the world by the publication of his journal. We are informed by him that the country is extremely unhealthy, and that there are no mountains of any importance in the interior. The coast is surrounded by lofty mountains, which rise in many places to great heights. Mount Solyma, called at present Tachali, to the north of Phaselis on the map, is near a fall of water, which is said to have been the place of the city (Andros. vol. i. p. 493). According to Strabo (xiv. c. iii. vol. iii. p. 213, Tachnitz) there is a great number of good harbours, notwithstanding the rocky nature of the coast. The length of the coast, from Telmissus on the west to Phaselis on the map, is said to equal that of Egypt. The northern part of Lycia is occupied by the mountains which support the high table-land of Phrygia on the south, and which appear to have been known to the ancients under the name of Mesaecyus. Mount Memnon is situated in the centre of the country, where there are no mountains, according to Mr. Fellows. The Xanthus, which is also represented as an inconsiderable stream, is, in reality a river of considerable length, flowing from the mountains in the interior, and the whole of this portion of being occupied by mountains, as commonly thought, is, on the contrary, a fertile plain, surrounded by mountains on every side, and drained through its whole exent by the river Xanthus. The Lycians the Lycians and Lycus the Lycians were originally called Mitylanis, and afterwards Solyma, but again changed their name to that of Termea, after Sarpedon settled in the country, having been compelled to leave Cete in consequence of dissensions with his brother Minos. They were, according to tradition, under the authority, or rather held sway, from Lycus, the son of Pandion, who came to Lycia after he had been expelled from Athens by his brother Areus. (Herodot., i. 173. Compare Strabo, vol. iii. p. 217, 218.) In the Homeric poems the country is always called Lycia, and the Lycians are mentioned as a warlike people, and among whom Bellerophon is sent to fight by the king of Lycia (Ilii. vi. 184). In later times the southern part of Phrygia, on the north of Lycia, was always called Lycia; but the people are never called Solymi, although the name still remained in Mount Memnon on the north-eastern coast. That Lycia was early colonized by the Greek nation is evident, not only from the account of Herodotus, but also from many other Lycian traditions, as well as from the worship of Apollo, who had supremacy over the whole country. Xanthus was a Cretan settlement (Steph. Byz.), and 60 stadia below the town was a grove sacred to Latona, near an ancient temple of the Lycian Apollo (Strabo, vol. iii. p. 215; Diod., v. 56). But the chief temple was at Patarus, the winter home of the Lycian, where in the month of Anthesterion, used for dyeing yellow, may have formed one of the seeds of Lycium, as it is common in the countries where the first kind is said to have been produced, and some species Rhamnus were by the old botanists called Lycium. Though there are many plants described as Lycium, the most generally approved is that of India, so-called Lycium indicum, of the ancient, in fact a

LYCIA contained many cities of considerable importance. Phiny (Nat. Hist. v. 28) mentions 36, but says that there were formerly as many as 70. Telmissus, on the borders of Caria, a seaport with a good harbour, must have been an important place; but it was burnt by its inhabitants, when they could no longer resist Brutus and Tios; and to the east, along the coast, the city of Nova (mentioned in the Acts, xxvii. 8), as a sea-port placed for the convenience of those who were on their voyage from Crete to Italy, as well as for the convenience of those who were at anchor in the sea, off which were the Cretan islands. On the borders of Pamphylia was the important town of Phaselis, founded by the Dorians. (Herodot., i. 174.) Telmissus was one of the most flourishing commercial cities of the southern coast of Asia Minor. It was one of the principal resorts of the Cilician pirates in the latter times of the Roman republic, and was destroyed for this reason by the emperor Trajan. (Cicero. de nat. deor., v. 10.) It was afterwards rebuilt, and is mentioned by Lucan (viii. 231); but it never recovered its former importance.

LYCIUM. Many antient authors, and among others Dioscorides, describe under the above name a substance used in medicine, which is stated to be of two kinds, one obtained from Lycia and Cappadocia, and the other from India. The former is said to be the produce of a thorny shrub called Pyxanthus. The latter is stated to be more valuable and efficacious as a medicine, and to be produced also by a thorny shrub which grows in a part of the country.

Most modern authors have stated these plants and the substances they produce to be totally unknown; others consider species of Rhamnus, or the common box, to be liable to the same name. But it is evident that the common box, the Cretan species of the plants; while Gerasim ab Orto thinks that the Lyceum to be the substance, and Acaia Catechu the plant yields it. It is possible that some species of Rhamnus, as R. inofficinis, of which both the root, wood, and berries pass under the name of Catechu, and of which the leaves and wood used for dyeing yellow, may have formed one of the seeds of Lycium, as it is common in the countries where the first kind is said to have been produced, and some species Rhamnus were by the old botanists called Lycium. Though there is uncertainty in the name, as well as in the substance, that of India seems to have been quite unknown until the publication of a. paper 'On the Lycium of Dioscorides' by Dr. Royle, in the Linnean Society's Transactions for 1813, where it is stated that there is no proof that Catechu was the same thing (Lycium indicum) of the antient; in fact a
incompatible with the evidence adduced on the subject from Oriental writers. The Greek authors on medicine having been translated into Persian, and these, with additions, forming the works now in use in India, we may expect to find in them some trace of Lyco-

mum; and in fact that called Moxamum al-Udetzech; loof-
gon is mentioned as the plant which yields huera, and in

Persian it is called felz-zubeh. Loofgon is evidently written for loogon, through an error of the transcriber in a dialectical point, in the same way that Filakoor (Philip of Mace-

ron) has been changed in some of these works into Filakoor.

This is further evident indeed from referring to the Latin

translations of Serapion and Avicenna, where hadad and

felz-zubeh are translated Lycoium and Lycium indicum.

In the Persian work, hootz or hoozie (the same word as hadad) is described as being of two kinds: one from India, of

which the Hindoo name is rusot; and the other from Arabia.

The Persian name felz-zubeh is translated by Mr. R. learned that both the wood dar-huld and the extract rusot were imported into the plains of India from the Himalayas. On travelling in these mountains, and on wishing to be shown the plant which produced the wood called dar-huld as well as that from which the rusot was procured, species of Berberis were im-

ediately pointed out, and it was stated that both the wood

and the extract were procured indifferently from Berberis

australis, B. philadelphus, B. Lycium, and B. pinnata. On
cutting into the wood of each, and having converted some into extract, he found both to correspond very exactly

with what he had bought in the plains under the name of dar-

huld and rusot. The extract rusot is procurable in the bazars

of India, and being much employed by the native practitioners of medicine in India, as an external application rubbed over

the swollen eye-lid either simply or in combination with

opium and gum and a little water or oil, both in incipient and chronic inflammation of the eye. The wood of Berberis,

being employed both in Europe and India, is translated, by yellow dye, it has been suggested by Mr. E. Solly, in a paper read be-

fore the Royal Asiatic Society, that the root, wood, or ex-

tract might be imported from India for the use of the manu-

facturers of Europe. This notice may appear disproportioned to the importance of the subject, but it is interesting as

with purple, the head reticulated with white lines, and the scales white at the tips; greenish-yellow below, eyes livid-

green. Length from nose to tail 12 inches; of the tail two

inches. Locality of the variety above described,—among decayed wood, near a small stream, immediately beyond Kurirchane, in about 25° south of the equator.

Habits, &c.—When, continuing Dr. Smith, 'by the re-

moval of some of the rotten masses, the reptile was exposed,

it moved slowly among the remaining ones in search of a place of concealment; and when it was interrupted in

its advance, it simply retired within itself without any dis-

position to resist the opposition offered; a similar course I had previously observed others of the same species pursue

when attempts were made to secure them; and neither did

the one here described nor the others ever move with any considerate rapidity, nor appear much in fear of their

assailants. All the specimens which I have seen of this

species were obtained in damp situations, and never remote from localities where they could rapidly and without much

exertion conceal themselves if necessary; and in the latter

respect they resemble the most of the innocuous snakes

of South Africa, which are not endowed with the powers of

effecting rapid movements.

LYCOPUS EUROPEUS, a wild plant inhabiting wet

ditches and sides of ponds, belonging to the natural order

Asiatic, and known popularly under the name of gipsy-

wort, because gipsies are said to stain their skins with its

juice.

LYCOPERDON, a genus of fungi, emitting when burst,

carried by violence or wind, a nauseous odour of a similar

kind as the rot, whence the species are commonly
called puff-balls. The old botanists collected under this

name a variety of plants, very different from each other in

many respects, although agreeing in the circumstance just

mentioned: recent writers have divided them into many distinct genera. The only two which it is necessary to mention here are the common puff-balls, which burst irregularly, and the starry puff-balls, which split in a definite stellate manner. They are each inhabitants of meadows, pastures, and some of the

species are exceedingly common. When the common puff-

ball, Lycoperdon gemmatum, first appears, it forms a whitish ball, looking like a common estable mushroom, but by
degrees it changes colour, becomes brown, and tearing irregularly at the apex when ripe, their outer rind separates into a definite number of lobes, which spread open, curve backwards, and at last elevate upon their centre a mass con-
taining all the spores. No use has ever been made of any of

the Lycoperdons, except in the case of L. giganteus, a very

large indescribable species, often many feet in circumference, and filled with a loathsome pulpy mass, which has been

employed as a styptic, and for tinder.

LYCOPHRIS. [FORAMINIFERA, vol. x. p. 348.]

LYCOPHRON, a native of Chalcis in Euboea, the son of

Socles, and adopted by the historian Lycus of Rhegium,

was a distinguished poet and grammatician at the court of

Ptolomy Philadelphus, from B.C. 280 to B.C. 250, where he

formed one of the seven poets known by the name of Picias.

He is said by Ovid to have been killed by an arrow. (Istae, 331.)

Lycophron wrote a great number of tragedies, the titles

of many of which are preserved by Suidas; but only one

has come down to us, entitled 'Cassandra, or Alexandra.'

This poem however cannot have any claims to be called a

tragedy; Cassandra is the only person introduced as

speaking; and she the destruction narrates to Priam the destruction of Troy, and the subsequent adventures and misfortunes of the

Grecian chiefs. But in the course of her narration she

gives an account of almost all the leading events in Greek

history, from the Argonautic expedition to the time of Alex-

ander the Great. The work is written in iambic verse, and

has no pretensions to any poetical merit; the style is very

obscure, and the meaning of most passages very doubtful,

which led Statius to describe it as the 'Latebris Lyco-

phronis atri.' (Stob. v. 2, 157.) But from the quantity of

mythological and historical information which it contained,

and perhaps from its very obscurity, it formed a favourite

study with the Greek grammarians, who wrote many

com-
who lived in the 12th century of the Christian era, is still extant, and affords no small assistance in making out the meaning of this difficult poem.

The 'Cassandra' was printed for the first time at the Aldine press in 1513. The best editions are by Petter, Oct. 1697, 1702; by Reichard, Leip. 1778; by Sebastian, Rome, 1804; and by Bachmann, Leip. 1833. The commentary of Tzetzes has been published with most of the editions of the 'Cassandra'; and has also appeared in a separate form under the title of 'Cassandra,' by A. S. G. Leip., Leip. 1812.

The 'Cassandra' has been translated into English by Lord Royston.

LYCOPODICAŒZA, a natural order of vascular Acrógena, chiefly consisting of moss-like plants, inhabiting moist and shady woods in all parts of the world.

They never exceed the height or length of two or three feet, and usually grow prostrate, having their stems covered with numerous imbricated scale-like leaves, which, at the ends of the branches bear in their axils bivalve cases containing an inflammable powder, sometimes extremely fine, and used for artificial fireworks, which is supposed to be their spores. No distinct trace of two kinds of sexes has been found in these plants, which seem to have no very close allomorphous existing races of the order.

LYCOPODITES is a genus representing several fossil forms, near which systematicists always place them, chiefly consists in their being sesquial, and having spiral vessels in their stems. Some of them, especially Lycopodium rubrum, are violent purgatives, and it has been proposed to use them by the Indians to purify their medicines from the impurities of vegetation. They have, therefore, also a remarkable importance to any except the botanical systematicist. Their name has, however, been brought frequently before the public in popular works, in consequence of an opinion that certain large fossils common in the coal-measures, and called Lepidodendra, are the relics of an extinct gigantic race of these now pigmy species. This opinion has been formed upon the supposition that the dichotomous mode of branching, common in Lycopodiacea, is a circumstance of paramount importance in determining natural affinities, and that the Lepidodendra were sesquial. The latter is however not proved, nor indeed very probable, and the internal anatomy of Lepidodendron Harcourt has been shown, in the 'Fossil Flora,' to be unfavourable to the supposition. (Fos-

sial Flora, article 'Lepidodendra,' and Adolphe Bronnigurtz's 'Végétaux Fossiles,' article 'Lycopodiées'.

LYCOPODITES. The affinity of many fossil plants to some of the various genera composing the Lycopodiacea is very distinctly pointed out by M. Longnieri, both in the 'Problèmes des végétaux fossiles' and in the 'Théorie des Végétaux fossiles.' Such of these as agree in the following characters are ranked under the title of Lycopodites.

Branches pinnate; leaves inserted all round the stem, or in two opposite rows, not leaving distinct and uncurved centrica. Several species are described from the 'coals and fossiliferous formations.'

We give below a drawing of part of Lycopodites falcatus (Philips's 'Ged. of Yorkshire') from the oolites of Gristhorpe, near Scarborough.

LYCOURS, Savigny's name for a genus of Dombrian- chidé Annulés (Nerides, properly so called) of Cuvier. See Savigny ('Eye. Annel.').

LYCGRUS. [SPARK].

LYCGRUS, the Athenian orator, the son of Lyco-

phron, and the grandson of Lycurgus, who is ridiculed by Aristophanes (Birds, 1, 1296), was one of the warmest sup-

porters of the democratical party in the contest with Philip of Macedon. The time of his birth is uncertain, but he was older than Demosthenes (Luban. Arg. Aristogeiton); and if his father was put to death by the Thirty Tyrants (Ptol. Decem Ort., p. 841, B.), he must have been born previous to n.c. 404: but the words of the biographer are, as Mr. Clinton has justly remarked ('Fast. Hell.,' vol. ii., p. 151), ambiguous, implying that it was his grandfather who 'put to death by the Thirty.'

Lycurgus is said to have received instruction from Plato and Isocrates. He took an active part in the management of public affairs, and was one of the Athenian ambassadors who succeeded (n.c. 343) in counteracting the designs of Philip against Amphissa and Peloponnesus (Demost. Phil., phil. 124, ed. Reiske). He was in the office of the censor of the public revenue for three periods of five years, that is, according to the ancient idiom, twelve years (A. Sic., xvi. 88); and was noted for the integrity with which he discharged the duties of his office. Bed. (Dea. Zon. Athen., p. 42, ed. H. Reiske), considers that Lycurgus was the only statesman of antiquity who had a real knowledge of the management of finance. He raised the revenue to twelve hundred talents, and also erected during his administration many public buildings, such as the temple of Bacchus, and the Panathenican course. Great confidence was placed in the honesty of Lycurgus, that many citizens confided to his custody large sums of money, and shortly before his death he had the accounts of its public administration engraved on a block of the wrestling-school. An inscription, preserved to the present day, containing some accounts of a manager of the public revenue, is supposed by Bockh ('Public Economy of Athens,' vol. i., p. 224) to be a part of the accounts of Lycurgus. (See the inscription in Böckh's 'Corpus Inscriptionum Graecarum,' vol. i., p. 350, No. 137.)

After the battle of Charonea (n.c. 388) Lycurgus con-
ducted the accusation against the Athenian general Lyca-

ron, and was made the prosecutor of the orators, and was himself in the pursuit of the destruction of thebes, n.c. 335. He died about the year n.c. 323, and was buried in the Academ. ('Pausan. i. 29, § 15.) Fifteen years after his death, upon the ascen-
dency of the democratical party, a decree was passed by the Athenians recognizing Lycurgus as the founder of their laws; and Lycurgus; a brazen statue of him was erected in the Ceres-

mucos, which was seen by Pausianius (i. 8, § 3), and the representative of his family was allowed the privilege of dining in the Prytanæum. This decree, which was passed in the year 230, came down to us at the end of the 'Lives of the Ten Orators.'

Lycurgus is said to have published fifteen orations (Fast. Ort., p. 843, C.; Photius, Cod., 266) of which one only has been transmitted to us. This oration, which was del-

ivered n.c. 330, is an accusation of Lycurgus of Sicyon (See the 'Corpus Inscriptionum Graecarum'), against his father, Dionysius of Halicarnassus as deficient in courage, and as having been the cause of the great expense of the ends of the war. (See Böckh, 'Public Economy of Athens,' vol. i., p. 264-265; vol. ii., pp. 183-185, Engl. trans.)

The best editions of Lycurgus are by Taylor, who pub-

lished it with the 'Oration of Demosthenes against Maca-

thons,' 1734 (28 vols.), and by Baier and Sauppi, 1834. It is also included in the edition of the 'Oratores Graeci,' by Reiske and Becker, 1844, and has been translated into French by Auger, Paris, 1783.


LYCUS, River. [ANATOLIAN].

LYDFORD, a village in the west of Devonshire, was miles north of Tavistock, now almost deserted, and ceased only for the sake of a waterfall or cantaract in the Ly, near a bridge where the stream is bent in between 100 300 yards. The river is full, broad, and beautiful, is a very picturesque and highly interesting object, though Ridam ('Survey of Devon') says it was made such a hideous noise, that only heard but not seen, it caused a kind of fear to the passengers, seeking to them who looked down to it, a deep abyss, and may not be numbered among the wonders of the world. This insignificant village was formerly a frontier town of considerable strength and importance, having 140 burgesses within the walls, and many without, and protected by a castle, erected probably by the Saxons, when they had driven the West Britons across the Tamar. L. was burnt by the Danes in 997. It is recorded in Domesday as a manor and borough in ancient demesne, having former parts of the possessions of the crown in the time of Edward the Confessor, and as not being liable to any impost, except the hundred and the tithes, and for the same reason L. appears appears to have been tallaged with Exeter, Axminster, Wiford, and ten other towns, in 20 Henry II.
LYDFORD, one of the most extensive in the kingdom, including the high morass called the Chase or Forest of Dartmoor, formerly Dertemore, which occupies the centre of the county of Devon.

Lydford with Dartmoor was commonly annexed in royal grants to the barony of Cornwall, and in 6 Edward III., after the forfeiture of Gaveston, we find Thomas le Erscokene committee of the earldom (1 Abr. Rot. Orig., in Secae. 186, 195, 196), and also constable of Lydford Castle, and keeper of the forest of Dartmoor, and paying their dues. Lydford and Dartmoor were inalienably incorporated with the dukedom of Cornwall upon its creation in 1339, in favour of the Black Prince.

Lydford Castle, sometimes called the castle of Dartmoor, was on a high rock in Dartmoor, called Creswell Tor, very dilapidated. It is the Stannary Castle, and contains the rooms where the warden of the stannaries of Devon, an office sometimes granted to the abbot of Tavistock (2 Parl. Rolls, 19 b.), or the vice-warden, held his stannary courts; it is said also that the charter of Edward I., the warden of this county were to be imprisoned elsewhere. In the last year of this king's reign, the warden of the stannaries claimed the body of a warden who had been imprisoned upon a charge of killing his brother, and the case was reported as a precedent in the administration of justice, and it was found to contain a reservation of cases of life and members.

The privilege of imprisoning at Lydford became the subject of a complaint in parliament at the close of the reign of Edward III., in 1377, when it was assailed by the commons, and the earl of Cornwall took the stannaries for arrears of account out of other gales and kept them at Lydford, where there was sometimes no gale delivery for ten years, and where these supposed tinners were so favourably situated that the market was a market of the last place and the third comer, as to the privilege of coinage. (Cal. Inq. post Mort., 10.) The table, round which these legislators assembled, and the seats which they occupied, have ceased to exist. These interesting remains were some years since brought to light and removed by the workmen of the late judge Sir Francis Buller, who, unfortunately for those who respect the relics of by-gone usages, had purchased an estate in this parish, and the fragments of these venerable monuments were employed in the construction of a hotel.

Like other border districts Lydford presents some peculiarities in respect of tenures. It is said (3 Co. Rep., 84) the custom of Lydford Castle is, that freeholders of inheritance cannot pass their tenements except by surrender into the hands of the lord. This particular form of restriction upon alienation appears to have been by no means usual. ('Year Book,' 14 Henry IV., fo. 1.) Risdon mentions other peculiarities annexed to the tenures of the estate of Lydford, called the Lydford Custom. ('Bibl. Manu.,' 3, 297, 56, note 1.)

Though Dartmoor is a bleak unsalted morass, we find that in the time of Henry III., 'David de Seysren held a yerd-land (virgata terra, sometimes 20, sometimes 48 acres) in Seysren and Sappesby, by the service of the serjeanty of finding two arrows when the king came to hunt in the Chase of Dartmoor and upon his ancestors since the Conquest' (Testa de Nevile, 36), and that Richard de Droscombe held a yerd-land of the (yearly) value of half a mark (6s. 8d.), in the hundred of Exminster by the serjeanty of carrying the king's bow when he went hunting in Dartmoor (106).

The service of Odo de Archer in Droscombe was to present a bow and three arrows when the king hunted in Dartmoor (ibid. 196). LYDGATE, JOHN, an ancient English poet, of the successors of Chaucer, was a monk of the Benedictine abbey of Bury St. Edmund in Suffolk. The dates of only a few of the events of his life have been ascertained. He was ordained a subdeacon in 1389, a deacon in 1393, and a priest in 1397; and his own conjectured that he was born about 1375. Warton says he seems to have arrived at his greatest eminence about the year 1430. After a short education at Oxford, he travelled into France and Italy, and returned a complete master of the language and literature of both countries. (1) A man of such a spirit of burnt and erudition, that he opened a school in his monastery for teaching the sons of the nobility versification and composition. Although philology was his subject, his work was not unacquainted with the philosophy with which it was connected. His art was not only a poet and a rhetorician, but a geometrician, an astronomer, a theologian, and a disputant. Warton was of opinion that Lydgate had considerable additions to those amplifications of our language, in which Chaucer, Gower, Chaucer, and Chaucer was first the beginning of our writers whose style was clothed with that perspicuity in which the English phraseology appears at this day to an English reader.

To enumerate Lydgate's pieces would be to write the catalogue of a little library; Ritson, in his 'Bibliographia Poetica,' has given a list of no fewer than two hundred and fifty-one. No poet seems to have possessed greater versificity. His most esteemed works are his 'Story of Thebes,' the 'Fall of Princes,' and the 'History, Siege, and Destruction of Troy.' The first is printed by Spath in his edition of Chaucer; the second, the 'Fall of Princes,' or 'Boke of Johan Bochas,' first printed by Pynson in 1494, and several times since, is a translation from Boccaccio, or rather from a French paraphrase of his work. 'De casibus Virocum et Feminarum Illustrium.' 'The History of Troy' was first printed by Pynson in 1513, but more correctly by Marsha in 1555, and was once the most popular of his works.

The first for life was the Lydgate by King Henry VI. in 1446, probably upon the presentation to that monarch, when he visited St. Edmunds Bury, of a MS. Life of St. Edmund, the patron saint of the monastery. This manuscript is still preserved in the Harleian Library at Woolwich, and was one of the most splendidly illuminated MSS. in that great repository, which also contains in the old Royal, Cottonian, Harleian, and Lansdowne Collections, other splendid manuscripts of Lydgate's various poems.

A note in Watke's 'Catalogue of the Harleian Catalogue of Manuscripts seems to insinuate that Lydgate did not die till 1482, which is improbable. He was certainly alive in 1440; and the best authorities place his death about 1461. (Wighton's Hist. Engl. Poets, 4th ed., vol. ii., p. 51-100; Ritson, Bibliography of British Poets' Specimens; Chalmers's Biogr. Dict., vol. xx., pp. 5, 6.)
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Itself from the Mæsippa near the borders of Phrygia, runs parallel to the Mæsippas through the centre of Lydia and terminates on the western coast opposite the island of Chios. A branch of Timusius, called Sipylus, stretches more to the north-west towards the towns of Cuma and Phocaea. The plain of mountains which separates Mysia from Lydia appears to be a cause similar to that which obstructs the northern range known in Byzantium by the name of Olympus, and in Myasia by that of Ida and Tmolus. Lydia is thus divided into two principal valleys; the southern, between Mæsippas and Timusius, through which the Cayster flows, is of the more extreme character. The country of Cramis, watered by the Hermes, and its tributaries the Hyllus, Pactolus, and Coganus, forms a considerable plain. The fertility of Lydia and the salubrity of the climate are frequently mentioned by ancient writers; and on the spot these proofs are confirmed by reports of modern travellers. (Chandler's Travels in Asia Minor, p. 260; compare Argandell's Visit to the Seven Churches of Asia.) Chisholm speaks of the country between Timusius and Mæsippas as a region expressively delicious.

The origin of the Lydian people is uncertain. Some writers, and among others Josephus (Antiquities, i. 6, 4), have imagined that they are mentioned in the book of Genesis (x. 22) under the name of Lud (םלד); in which passage they are described as descendants of Shem. Homer does not give us any known name of Lydia, though he always calls the people Mæasipae. According to most ancient writers, the people were originally called Mæasipae, and obtained the name of Lydians from Lydia, the son of Ays, who is mentioned by tradition as the first king of the country. (Herodotus, iv. 149; Rhodius, ap. Strabo, x. 583; Pliny, N. H., v. 30.) Later writers make a distinction between Mæasipae and Lydians, and represent the former as dwelling on the north-east of Timusius, near the river Hylus, and the latter as inhabiting the southern part of the country. According to Herodotus, the Lydians were of a common origin with the Carians and Mysians (i. 171).

The early history of Lydia is related by Herodotus, who informs us that three dynasties ruled in Lydia: the Alyattes from c. 1220 to 716; and the Memnonidae from c. 716 to 556. The proper history of Lydia can only be said to begin with the last of these dynasties; since the two first are almost entirely fabulous. The following is a list of the Memnonidae, the last of the Heracleidae monarchical, reigned:

- 1. Alyattes, from c. 716 to 678. 2. Ards, from c. 678 to 629. 3. Sadytes, from c. 629 to 617. 4. Alyattes, from c. 617 to 600. [Alyattes] 5. Croesus, from c. 600 to 556, though he was not the first who ordered them in the 7th century, but during the time of his father. [Croesus.] These monarchs were engaged in almost uninterrupted wars with the Greek cities on the coast; but the empire steadily increased in wealth and power. It obtained its greatest prosperity during the reign of Croesus, which extended all the length of Asia Minor and the west of the river Ialyssus (Kisi-rumak), with the exception of the Cilicians and Lycians. (Herodot., i. 28.) But this empire, the most powerful at that time in Western Asia, was overthrown by Cyrus (c. 556); and the country became a Persian province. Herodotus informs us that no nation in Asia was more warlike than the Lydians (i. 79); till, through the advice of Croesus, they were deprived of their arms by Cyrus, and obliged to learn music and dancing (i. 154). After the death of Alyattes, Lydia, with the rest of Western Asia, formed part of the empire of the Scyths; and on the conquest of Antiochus by the Romans, c. 189, it was given to Eumenes, king of Pergamus, as a reward for the assistance he had afforded them in their war against the Scyths. (Antiochus, Memnon; c. 265, 50, and 1 Macce., viii. 8.) On the death of Attalus III, c. 133, it came, with the other dominions of the kings of Pergamus, into the power of the Romans.

The Lydians appear to have enjoyed great commerce and wealth; and they had been possessed abundance of the precious metals; as is evident from other circumstances, and particularly from the rich presents which Croesus sent to the different oracles in Greece. (Herodot., i. 58.) The Lydians are said to have coined a large sum of gold which was washed down from the mountains by the river Pactolus; but there is no proof that they ever carried on the operation of mining. (Herodot., i. 93; v. 101; compare Heeren's Researches, &c., Asiatic Nations, vol. i. p. 106, 107, Eng. trans.) But in the time of Sardis and gold was found in this river (xii. 92); and if Herodotus had been misinformed, which is improbable since he had visited Sardis, the tale might easily have arisen from the appearance of Mount Timusius, which, according to a modern tradition, is covered with bright and shining paraven resembling gold-dust. (Chisholm, note on Croesus in Asia Minor, p. 250.) The Lydians are said by the Greeks to have been the first who put a stamp on gold and silver; and they claimed to be the inventors of all that was made of gold, and of the art of glass. They also were prevalent in Greece in the time of Herodotus (i. 94).

The most extraordinary work of art in ancient Lydia was the enormous sepulchral mound of Alyattes, the father of Croesus, erected a little to the north of the river Hermes. It was the place where the Lydians were accustomed to deposit the bones of their dead, and to interpose new offerings between the interments. The mound is situated between the Euphrates and the Halys, near the Tmolus, and is about 300 feet in diameter, and about 50 feet in height. It contains a vast number of different chambers, and is connected with smaller mounds of various sizes, and in some cases, one particular, near the middle, larger than the rest, which is supposed to have been the tomb of Croesus. (Chisholm, p. 316; compare Argandell's Visit to the Seven Churches of Asia.) It is described by Chandler as large and abounding in fish; its colour and taste like common pool-water, with beds of seige growing in it. (Travels, p. 262.)

Sardis (Σάρδης, Zardis, Sardea), called at present Sirt is a town which, according to Homer, was a tributary of the Hermes in the middle of an extensive plain. The city was remarkable for its strength, being situated on a lofty knoll which was a perpendicular precipice on the back part, and looked towards Mount Timusius. It is not mentioned by Homer, but some have conjectured that he speaks of it under the name of Hydrie (Ἑωρίη), or 385). Sardis was taken by the Cimmerians during their invasion of Lydia, the reign of Ards. (Herodot., 1. 13.) It was the capital of the Lydian monarchy, and the residence of the Persian kings. Persia occupied a large extent of territory during the reigns of Artaxerxes I. (Herodot., 100, 101) at which time the houses were principally made of reeds or straw, and those built of stone had thatched roofs. Under the Romans, Sardis formed the seat of a separate provincial government. (Curtius, iv. 503; Strabo, iii. 4. 30.) A castle was destroyed by an earthquake in the time of Tiberius Tac., Ann., ii. 47.) It was again rebuilt, and is frequently mentioned in the war between the Greeks and Turks. Sart is at present

's miserable village' (Chandler's Travels, p. 255); but there are large ruins of the ancient Sardis in the neighbourhood.

Philadelphia (Φιλαδέλφεια) called at present Alhab Sherd, that is, City of God, 28 miles south-east of Sardis (Ancient Mem., p. 336), stands on a part of Mount Timusius, by the river Cramis. This town was built by Attalus Philadelphus, king of Pergamus; and is still a place of some importance. Chandler speaks of it as 'a mean but considerable town, large extent, spreading on the slopes of three or four hills. (Travels, p. 29.) To the east of Philadelphia Strabo speaks of the district of Milap, Sitara, Apam, which is 20 miles in length and 400 miles in breadth (xii. 6, 12). Caris Strabo was in doubt whether it ought to be reckoned as part of Mysia or Minoa. He describes the surface of the part as covered with sahes, and the mountain rocks as of a dull brownish colour; and adds that they had been produced by a recent earthquake (xii. 6, 12; Compare London Geo., Journal, vol. viii., p. 142.) Vine was cultivated in this district with great success.

Thyatira (Φθατιρα), called at present Altindere, was built by Seleucus Nicator; though it was then called by the same name before his time, as Pelopis. (Steph. Byz.; Pliny, N. H., v. 29.) Strabo notices it as a colony of the Macedonians (xii. 92).
LYM was situated on the borders of Lydia and Mysia near the river Hyllus, on the road between Pergamus and Sardis. It was famous for the art of dyeing purple. (Acts, xvi. 14; and Kuinoel's note on the passage.) Thyatira, Philadelphia, and Smyrna with the Seven Churches which are mentioned in the Book of Revelations.

LYDIAN MODE. [Mode.] LUDUS, JOANNES LAURENTIUS, was born at Philadelphia in Lydia (whence he derived his surname), and being sent to Rome, repaired to Constantinople, and was employed for forty years at the court of the emperor in various official duties. Lydus appears to have been well acquainted with Greek and Roman antiquity, and the library of the emperor. After he had retired from the imperial court, much curious information on the mythology and history of several of the nations of antiquity.

There are three works of Lydus which have been published, viz., 'On the History of the Roman Republic,' edited by Hase, Paris, 1812; a second, 'On the Months,' which was originally published by Schoel, Leipzig, 1794, and has since been edited by Roether, Leipzig, 1827; and a third, 'On Oeuvres and Prodigies,' which has also been published by Hase, Leipzig, 1794. The text of the third, which has never been printed, is the best edition of Lydus. It is written by Bekker, Bonn, 1857, and forms a part of the 'Corpus Scriptorum Historiae Byzantinae.'

Lydus, also, born 104, died 1676, an English clergyman, distinguished by the attention which he paid to the Saxon and Gothic languages and literature, was a native of Totnes, educated in the university of Oxford, and beneficed in Northampshire. The life which he held was hard, and he exchanged for that of Yardley Hastings. This appears to have been all the preferment he enjoyed.

The publications of Lydus are all in that rare department of literature to which he especially devoted himself. The fame which he acquired considered, is not diminished by the man who wrote it.

Lyme Regis is a small and irregularly built seaport town in the parish of Lyme and county of Dorset, 20 miles west from Dorchester and 120 west-south-west from London. The streets are badly paved and not at all lighted, and the principal thoroughfare is so narrow, that the safety of the vehicle is left to the good conduct of the driver. The town, held in the best part of the town, is regarded as a nuisance, and the butchers' shambles are erected in the main street. Indeed the corporation appear for many years to have altogether disregarded the improvement of the town, and the length of time which they have left it to the justices from the 13th Edward I. to the 26th Charles II, which last was acted upon until 1688, when it was recalled by a proclamation of James II. The revenue of the corporation in 1633 was 2864l., which amount was to cover its expenditure. This however is independent of the 'Cobb' or harbour dues, which amounted, in the year ending Sept. 30, 1633, to 417l., the disbursements on account of the same during that period being 446l. That the trade of the port is rapidly declining appears from the circumstance that in 1831 the number of vessels which entered and cleared with cargoes inwards, outwards, and coastwise, was 629, the aggregate tonnage of which amounted to 44,330; while in 1833 the number of vessels was only 201, and the corresponding tonnage 11,877. Indeed the harbour appears chiefly valuable as a place of refuge for small vessels during winter weather, as they may safety shelter between Lyme and Regia and the Start Point of Portland. The church, dedicated to St. Michael, is an ancient edifice. The living, a vicarage in the diocese of Bristol and patronage of the prebendaries of two of the canons of Sarum, is valued at 754l. per annum. In 1836 the population of the parliamentary borough, comprehending the parishes of Lyme and Charnville, was 3345, that of the town alone being 2407. Until the passing of the Reform Act Lyme Regis had returned two members to parliament by the reign of Edward I. It now returns but one member for the borough.

LYMPH.] A. [Lymphatic.] LYMNEA. [Lymnea.] LYMNORE (Zoology), Peron's name for a genus of Mollusca. This name comes too near to Linnaeus. See the article Lymnaea.

LYMNOIRA, a genus of fossil zoophyta, proposed by Lamouroux (Expos., p. 79). Also the name of a genus of recent Medusae. (De Blainville, Acta phytolo., p. 290.) LYMPH, LYMPHATICS. The lymphatic vessels are the system of vessels which, from the part that they play in the process of absorption, are not unfrequently called absorbers. They consist of minute branched tubes of extremely delicate membrane, whose extremities are attached in a more or less direct manner to the surface of the body. From this network they gradually converge into a succession of branches of increasing size, and terminate in two main trunks, called the right and left great lymphatic veins, through which the lymph is poured with the clyde from the thoracic duct [LACTEAL] into the right and left subclavian veins. The lymphatics also communicate
with the veins at some other parts of their course, Chiefly near
their minute extremities, and more rarely by larger branches.
They have in their interior numerous delicate valves formed
of conical folds of the limb, the Ouse, is exactly like those of
the veins [Circulation, fig. 11], and, like them, prevent-
ning the retrograde course of the contained fluid.
The valves of the lymphatics however are much more closely
set than those of the veins, so that when full of fluid, 
species of most of them they give those in
veins a knotted or beaded appearance, by which they are
easily distinguished from veins of the same size.
In the course of the larger lymphatics there are numerous firm
roundish lymphatic glands. [Gland.] To each of these there pass two or more
lymphatic vessels, which on entering them become ex-
tremely tortuous, and after varied convolutions and anas-
tomoses, terminate in nearly the same number of branches, 
which issue from the gland and pursue their course towards
the main trunk.

The Lymph is a thin opalescent whitish fluid of a somewhat
saline taste, which a short time after it is removed from the
body separates into a clear fluid and a soft white or pinkish
coagulum. It is extremely difficult to obtain, in conse-
quence of the small size of the lymphatic vessels; but in
the rare cases in which a sufficient quantity has been pro-
cured for analysis, it has presented the same constituents
as the blood depends for its coloring principles.
The agglutination consists of nearly pure fibrin and the fluid port
is a solution of albumen with alkaline salts.
The physiology of the Lymphatics is explained in the
article Absorption.
Lymph is rather vaguely applied to many
different morbid secretions which have a thin watery
appearance. Coagulating or conglutinable Lymph is the
fibrous matter effused in the adhesive inflammation.

LYNCHBURG. [Virginia.]
LYNN, distinguished as LYNN REGIS, or KING'S
LYNN, a parliamentary borough, port, and market-town
in the hundred of Freebridge Lynn, in the county of Nor-
folk, is on the river or east bank of the river Ouse, a little
above its outfall, in 52° 45' N. lat. and 0° 25' E. long., about
88 miles in a straight line north by east of St. Paul's, Lon-
don, or 96 miles from Sherford Church by the road through
Cambridge, Ely, and Downham Market.

The present town is supposed to have existed before
the Conquest. It has been supposed that there was in
the Roman time a town on the spot where the village of West
or Old Lynn now stands, on the western side of the river.
Indeed, Mr. Henry Fieldly has supposed a town to
have had its outfall at or near Wisbeach (Wisbeach, or Ouse-
beach), the Little Ouse, with the Nare, and one or two
other streams, having their outlet at Lynn; but the old
channel of the Ouse having become obstructed, a new channel
was formed, and the town laid out on this tract.

The Great Ouse was thus brought by Lynn. The harbour
of Lynn was considerably enlarged by this alteration, the
western bank of the river being to a considerable extent
swapped, with one of the churches of Old Lynn, and
perhaps the site of the original or Roman town. (Richiard's
Hist. of Lynn.) Lynn had been, previously to this, a
place of considerable trade, and was especially favoured by King
John, who granted it a charter of incorporation. It was sub-
seuted to by Henry VIII. in 1537, by the municipal
company from the feudal superiority of the bishops of Norwich,
and changed the name of the town from Lynn Episco-
po, Bishop's Lynn, to Lynn Regis, or King's Lynn.
In the civil war of Charles I. the town stood out for
the king, but capitulated about 1643, after a siege of three weeks,
to the earl of Manchester, the parliamentary commander
for the eastern associated counties. A conspiracy was
formed soon afterwards to surprise the parliamentary garri-
sion, but was discover'd, and the plotter Sir Roger L'Estrange) was kept for some years in prison.

The town at present extends in length about a mile on
the east bank of the river, and about half a mile in breadth.
It is traversed or bounded by several narrow streams or
"waterways"; many branches of which are included in
the town over the Ouse, which is about as wide as the
Thames at London Bridge; but there are bridges about a
mile above the town over the Eau Brink, which is a modern
cut, and the old channel of the Ouse; by which bridges
there is communication with West Lynn as well as with
Wisbeach, with which it is connected by a branch canal,
which was formerly & now is built on the land side by walls, in which
are some gates on the south side of the town remains, and there are a few fragments of the was
in the fosse, which was outside the walls, still encloses the
port. In the northern part of the town are Annu's Forts,
the battery of heavy guns, intended to guard the river.
The town is well paved and lighted, but not
provided with water. The three principal streets are pa-
rallel to the river; smaller streets connect them or branch
off from them. They are entered at the intersection of the transept,
except in the more modern parts of the town.

The Tuesday market-place, in the northern part of the town, comprises
an area of three acres, and is surrounded by some good
houses. There is in it a market-cross, an octagonal building,
consists of a great many wains and sides, and the market
is the first story, surrounded by an open gallery.
The Saturday market is held in a convenient area near St.
Margaret's Churchyard. There are also a cattle and a
market. The guildhall is an ancient building of stone and
flint, with court-rooms, assembly-room, &c., and is a
borough gaol, but is not sufficient for the proper clas-
se of the prisoners. There are an exchange and a ca-
ron-house in one building, an excise-office, and a theatre,
avery convenient for the inhabitants of Lynn.
The borough comprises the united parishes of St. Margaret and
St. James, and the parish of All Saints in South Lynn.
The church of St. Margaret is a cross church of spacious dimensions,
which was once much larger. It contains portions of,
churches of the tenth and twelfth centuries, and perpendicular
architecture. The chancel or choir, which is early English, has
a fine east window, and two octagonal turrets crowning
the buttresses at the angles. There are two eastern
towers, one of which formerly had a lofty spire, and there was
formerly a lantern or tower at the intersection of the tran-
sept. The church-house, in the churchyard, was since
years back used as a grammar-school, but a new school-build
ing has been since built. The chapel of St. Nicholas is
large, being 194 feet long and 74 wide, inner dimensions. It
consists of a lofty nave with side aisles, and a five
transept or distinct choir: it is chiefly decorated in the
peculiar English architecture, with large east and
two west windows. It has a very rich south porch, and a fine:
west door. It has a spire 170 feet high, which was blown
in a century ago.
All Saints' Church is also a fine
building, but of smaller dimensions than St. Margaret: the
town, which fell down in 1763 and demolished part of the
church, has not been rebuilt. Beside the churches there are
two other ancient building, called St. Margaret's hospital,
which is a large hexagonal tower 90 feet high, a remain of the
Grey Friars' monastery, which served as a landmark
vessels entering the harbour. The chapel of our Lady
the Mount, or Red Mount Chapel, is on the east side
of Lynn, and the general view of the town and the elevated
region is a small cross chapel of stone, and is erected on
a wall of a more ancient building of coarse red bricks, regular octagon,
about 25 feet in diameter, with buttresses at the angles. St. James's Chapel was lately used as
a workhouse. There are several dissenting meeting-houses
in Lynn.

The population of the borough in 1831 was 13,374,
of which a very small proportion was employed in agricul-
tural pursuits. The following are the chief employers:
the fisheries are the only manufactures, and of the latter but little
is made. The trade of the place is however great. It is
port of that large portion of the midland counties which
is watered by the Ouse. The harbour is shallow, and the
commerce, which it is attempted to improve, is rather
intricate. Some parts of this channel are not
than one foot deep at low water in spring tides; and
following the channel from Lynn seawards, it is necessary
to go about three miles before reaching a depth of six
feet. The banks on each side of the channel are formed
some places to the height of ten or twelve feet. Lynn
dees are the deeper parts of the channel out to sea;
but they are ten or twelve miles below Lynn, following the
course of the Fens. (Lynn and Boston Deep.) The experts are chiefly eyes,
agricultural produce, sent coastwise, and a fine white
found near the town, and used in making glass. A vast
lynx

quantity of shrimps, caught on the shores of the Wash, are sent to London. The imports are corn and coal; timber from America; timber, deals, hemp, and tallow from the Baltic; wine from France, Spain, and Portugal, &c. Formerly many ships were fitted out for the Greenland whaling, but this branch of industry has been in a great degree given up. Ship-building is not carried on to the extent it formerly was. There is a corn-market on Tuesday, and a market for general commodities on Saturday. There are two yearly fairs.

The corporation under the Municipal Reform Act consists of six aldermen and eighteen councillors, one of whom is the mayor; by the same act the borough was divided into three wards, and the franchise given to parliament ever since 23rd Edward I. The parliamentary constituency in 1833 consisted of 257 freemen and 608 ten-pound householders; together 863. The parliamentary and municipal boundaries coincide, and include an area of 2620 acres.

The living of St Margaret is a perpetual curacy united with the perpetual curacy of St. Nicholas; their joint yearly value is 138l. All Saints is a vicarage, of the clear yearly value of 134l., with a glebe-house. Both are in the archdeaconry of Norfolk and diocese of Norwich.

There are at Lynn an endowed grammar-school, national and Lancasterian schools, and several private schools; a mechanics' institute, a parochial library in St Margaret's Church, and a public subscription library. There are four hospital and almshouses, and many other charitable institutions.

LYNX. The name of Lynxes is applied by zoologists to a subdivision of the great genus Felis, or Cats, well marked externally, and elevated by Mr. Gray to the rank of a genus, under the name of Lynx. There does not appear to be any considerable difference between the organization of the Lynxes and that of the other Cats; but it is extremely probable that there is some modification of the skull and of the organs of the voice generally, to produce the peculiarly powerful noise analogous to what is called 'spitting' and 'swearing' in the domestic cat.

Linnius, in his last edition of the Systema Naturae, recognized Felis lynx, and Lynx auratus, the woods and deserts of Europe and Canada as localities. This was probably the European Lynx, and the descriptions may have been founded on Lynxes from Canada as well as Europe.

Cuvier, in his edition, adds three other species, Felis Chaus, Caracal, and Rufa; and gives two varieties of Felis Lynx, with Europe, America, Northern Asia, and even Japan, as the habitations.

Felis lynx, the European Lynx, is a species of Lynxes—the Mountain Lynx, Cat of a mountain (North America), the Serval, lynx; the Buy Lynx, the Cuspid Lynx, the Persian Lynx, and the Libyan Lynx. He states that this third inhabits the vast forests of the north of Europe, Asia, and America, and possibly India, though probably he mistook them for the chait of Bacchus, in his conquest of that country.

The fourth, he says, is an inhabitant of the inner parts of the province (now the State) of New York. To the fifth he assigns the 'trees and woods in the marshy parts that border on the western sides of the Great American Sea, particularly about the Castle Kislair, on the river Terek,' and the Persian provinces of Ghilan and Mazanderan; adding that it is frequent about the mouth of the Kur, the ancient Cyrus. Persian and Indian, India and Persia, which he states to be the localities of the sixth; and Libya and Barbary are mentioned by him as the countries of the seventh. It is doubtful what animals Pennant meant to designate under some of these names. The Serval is not considered a Lynx.

Cuvier observes that there are known in commerce, under the name of Loups Corviers (Lupus corybatus), four or five sorts of Lynxes, which have long been confounded by naturalists, and whose specific limits were not perhaps well marked. There is a curious statement of the arrangement of M. Temminck, and then return to observe what part of it is adopted by the Baron.

M. Temminck gives the following as species. —

Felis corybata described as nearly equal to lynx in size, under the name of Battle of Linnus and the Swedes; but it has been remarked that no skins of it are contained in the cargoes that arrive from the Baltic. In commerce the skins of Felis corybata are said to be only obtained from

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the markets of Moscow, to which they are brought from the provinces of Asia. It is considered as probable that this species may have been confounded, under the name of F. corybata, with

2. F. borealis, which is intermediate in size between the fox and the wolf. This comprehends the Canadian but not the Mississippi Lynx of Cuvier, and is said to inhabit the north of both the old and the new continents: its fur, less valuable than that of Felis corybata, is also reported to be equally valued from Sweden and from Hudson's Bay.

3. F. lynx (true lynx), different from, but nearly allied to, F. corybata, F. borealis, F. rufa, and

4. F. pardina. Size of a badger, but the legs longer, in proportion than that of F. lynx. F. pardina is the Lorp Cervier of Perrault, and is found only in the south of Europe, the centre being the locality of the true Lynx.*

5. F. caracal; Nadan Caracal; and Cat of the Desert of Bure; Persian Cat (Lynx) of Pounant.


7. F. Chaus (Güldenstein), figured by Schreber. The other animals described under this name are considered to be referrible to

8. F. Caligata; Booted Lynx of Bruce; F. Libycus (Olivier); Libyan Lynx of Buffon.

Of these Baron Cuvier notices Felis corybata as the finest and largest; Felis lynx, which is almost entirely disappeared from populous countries, but is still to be found in the Pyrenees, the mountains of the kingdom of Naples, and, even, it is said, in Africa; Felis pardina, Oken, from the south of Europe; Felis rufa, Gülden; and Felis Chaus, or Lynx caracal, says Buffon, in Persia, and Egypt. Cuvier further observes that it is believed at present that the Booted Lynx, Felis caligata, Temm., may be distinguished from Felis Chaus; but he remarks that the former is nearly approximated to it, and that it has the same habits.

Felis Caracal (Persia, Turkey, &c.), which he considers to be the true lynx of the ancients, closes Cuvier's list of species; but he alludes in a note to Lynx fasciatus, L. Floris, and Felis aurata, and to Felis aurata of Temm., as belonging to this tribe.

Mr. Gray places his genus Lynxus (subfamily Felina) between the genera Felis, Linn., and Prionodon, Horst. M. Lesson gives the following species:—

1. F. lynx, the True lynx or the furrier Lynx of the Norwegians, and Wargelue of the Swedes, who recognize three very different varieties of it. He states that the whole of Europe is its habitat, where it has become very rare, and he says that he notices (Felis rufus) a pale variety, Felis rufa, Pennant; and that 'to captaine Brookes, an Englishman, this, which may be, in his (the captain's) opinion, regarded as a species.

2. F. pardina, Oken, Temm.; Lorp cervisor of the French Academicians; to this Portugal, Sardinia, Sicily, and Turkey are added, 'and it has been noticed, in this country, that the Lynx Serval, which cannot be considered a Lynx.

3. F. corybata, Temm. 4. Felis Borealis (Chat du Canada, Geoff.); to which the northern countries of America and Asia are given as its distribution. 5. Felis Caracal, the Lynx of the ancients (Africa, Persia, and Arabia). M. Lesson describes the differences of the Caracals of Algiers, of Nubia, and of Bengal. 6. F. Chaus (Olivier); F. aurata, Temm.; country unknown. 7. F. Chaus, Gülden. (Egypt, Nubia, and Causseus). 8. Booted Lynx (F. caligata, Buffon. Temm.; country unknown. 9. F. aurata, Olivet. This Lynx is given from Egypt to the Cape of Good Hope in Africa, and the south of Asia. M. Lesson also notices as particularly different the Felis Manul of Pallais and Desmarét, a species

* With respect to Felis pardina, Col. Sykes makes the following statement. Although Temminck, in his "Monographie de Mammalologie," p. 116, in a note, states that the skin of this Lynx is well known, I have nowhere been able to meet with a specimen in London; and as among the animals he appears to be aware of the existence of a Spanish Lynx, I thought it might be acceptable to the membrane, should exhibit specimen of the Lyceum of Sciences, of the skins. In Andalusia, when the specimen comes, it is called Oto deOtos (close meaning the pupil of the eye), illustrating the spotted character of the skin. Some persons in Southern Spain make entire articles of the skins. I have bought both skins at Seville for thirty three shillings, about 6s. 3d. Neither of these skins are preserved in the British Museum. However, M. Temminck describes the Pardina as "la partie du corps faite d'une peau qui ne contient pas de manque, ni de manquant, que de la perte de son coupee" (Le Chastel, 1832.)

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not admitted by Temminck, but which has, according to Pallas, the appearance of the Lynx. (Mongolian Tatarry.)

Sir William Jardine (Naturalist's Library, Mammalia, vol. ii., 1834), who adopts the genus Luchs or Lynxus of Mr. Gray, as the fifth genus of the Felina, enumerates the following species: L. Luchs aegyptiaca, inhabits the Nile Valley; L. aegyptiaca, inhabits the whole of Africa; L. nigripectus, inhabits banks of the Nile, and is not distinguishable from the former species by any remarkable character; L. aegyptiaca, inhabits N. America, woolly countries in the neighbourhood of the Pacific (Lewis and Clark); and L. lynx.*

Sir William Jardine remarks that there is yet considerable confusion among the Lynxes of Africa, and that, except in the lynx species are perhaps not well determined. He observes that Mr. Vigors and Dr. Horsfield describe one under the title of F. maculata from Mexico.

Sir William further states that another Asiatic Lynx may perhaps be added in the Felis affinis of Mr. Gray, figured in his "Illustr. of Indian Zoology."

It may be necessary also to call the reader's attention to two species of Felis, one in the volume of the 'Naturalist's Library,' Felis servalina, figured as F. ornata, which Sir W. Jardine has considered as identical with F. servalina, which species has the last-mentioned name, but which Mr. Gray considers to be distinct. The figures of both F. ornata, Gray ('Illustr. Ind. Zoo'), and F. servalina, Jardine, have small tufts on the tops of their ears, and are otherwise entirely similar; as if they represented the transition between some of the smaller Spotted Cats and the Lynxes.

Mr. Swainson ('Natural Hist. and Classification of Quadrupeds,' 1833) having compared the two typical forms of the Felis affinis, which he considers to be one species, has examined which group among the Felis can be likened to the Owls, and he fixes upon the Lynxes, because Lynxes and Owls are both nocturnal animals, both have short tails and comparatively large heads, and because the Owls are perhaps less remarkable for certain appendages or tufts which rise above their ears, whilst in the Lynxes the ears are long, and from the tip of each arises a tuft of lengthened hairs, perfectly analogous to the tufts of lengthened feathers on the horned Owls, the most typical birds of the family of Owls; and having noted that this same 'Classification of the animals of the Lynx' at the end of the volume is Lynx Anteas, ears tufted with hairs, tail short,' and it appears as the fifth and last subgenus of Felis. Linn., the other four being: 1. Leo Antiquorum, Lions, head and neck furnished with a mane of long hair; 2. Felis leo, Lion; 3. Felis Crataegi, Long, not tufted; 3. Cynaraus, Wur. Huntig Leopards, claws semi-retractile; and, 4. Pinnodon, Horse, affinities uncertain.

The Lynxes may be divided into two groups: the first consisting of those species whose bodies are comparatively slender, and whose tails and tufted ears are comparatively long; the second of those whose bodies are thicker and short, and whose ears and tail are comparatively short. The Lynxes is an example of the first subdivision; and the European and the Canada Lynxes of the second. Sir Wm. Jardine considers the tufts of hair at the tips of the ears as somewhat inconstant, and only present in spring, or the commencement of the breeding season, like those adorning the ears of many squirrels. It is evident that much doubt still hangs about many of the species, and we shall endeavour to lay before the reader some of those forms which are most free from uncertainty.

LYNxes OF THE OLD Continent.

As examples of the Lynxes of the Old World we select the following species:

Socaraz. M. Temminck describes this species (Felis Caracal), which is the Syngah Chau or Black-eared of Charleton and others, as having a pale reddish-brown fur with a vinous tinge, the red becoming paler as it reaches the lower parts. Two spots of pure white above the eyes, the uppermost of which is the eye itself, and the lowermost at its external angle. Termination and edges of the upper lip, chin, breast, belly, and inside of the legs pure white; parts whence the whiskers spring, black; back of the ears at the base, deep black, more grey towards the tips, which are tufted with long black hairs. Length, 2 feet 10 inches, of which the tail measures in height about 14 inches.

Mr. Bennett (Tower Mem., 1834) describes the Caracal as larger than the Fox, and the whole of the upper surface of the body as of a deep and uniform brown, the hairs being for the most part slightly tipped with grey; the under and inner parts nearly white; and the chin, whisker tip, and rump, and the space between the ears, and the other side of the neck, and the tail, have their one beneath its outer angle, completely white; neck and throat of a lighter and brighter brown than the rest of the fur; the ears long and upright, tapering gradually to a black externally and whitish within; whiskers short, taking their origin from a series of black lines which occupy the sides of the muzzle; at some distance behind them, in front of the neck on each side, a short and thick tuft of lighter colored hairs; tail short or nine inches in length, and the rest of the body and other large beasts of prey, most probably for the purpose of feeding upon what they leave. But in addition to this, it feeds on small quadrupeds and birds, the latter of which it is said to pursue actively on trees. It has obtained the name of the Caracal, from caryal, which signifies to spring up, and it is probable that the footstep of the lynx and having been found pressing upon the carasses which the former has left. According to M. Temminck, the Caracal hunts in packs like the wild cats, and runs down their prey. Pentian, quoting Thouvenot, notes their feeding habits, especially in the footstep at which the lion leaves, and seems to confirm the account given by M. Temminck, for he states that they are often brought up tame, and used in the chase of lesser quadrupeds and the large birds of their own, such as cranes, pelicans, and others. They are never seen to hold fast with their mouth and limb motionless on their prey, Pentian, quoting Thouvenot, says that they do not touch their prey, but hold it fast with their mouth and limb motionless on it. Pentian, quoting Hyde, also states that the Arabian writers who call it Anak el Arik, say that it hunts like the panther. It keeps up at cranes as if fluttering and covers steps as they fly. In captivity the Caracal is generally very well-natured and irritable, and does not seem to hold out much promise for domestication; but we are aware that it is safe to come to conclusions of this sort upon the evidence of an unreliable animal. Its general nature indeed hinted it for unlimited roamings. Since above was written, we have seen a young Caracal in the Garden of the Zoological Society at the Regent's Park, which is obtained very tame with a little attention of a little food and time, and anxious to be caressed, and playful as a kitten. Dr. Charleton however gives evidence of the fierceness and strength of this species for his relations that he saw it fall one on a bound, which was held at a moment, though the dog defended itself to the utmost.

This animal derives its name of Caracal from the Turkish words hara, black, and kulack, ear; and the Persian name Syngah Chau or Syag Chau (black, and guexch) ear. It is given the same change in the Turkish of which this is the Latin.

Authors seem to concur in holding that this is the Ar.
Lynx, of the antients, and though we lean strongly to this opinion, the reader should bear in mind that the latter evidently used the term to denote various animals, as Gesner well remarked. The 'lynces Bacchi varius' of Virgil (Georg. iii. 264) and the skin 'maelosum lynceis' alluded to by the same author (Ennius, i. 323), can hardly be held to apply to the Caracal, though Ovid's line (Met. xv. 413)

* Viata renemifero lynceas dedit India Baccho*
may. The truth seems to be that the antients themselves had no very precise ideas of the animal which was accorded to Bacchus as one of his attributes. The terms Lynx, Panther, and Tiger seem to be all employed to designate the animal or those animals; and if we refer to gems or coins or other ancient monuments, the Lynxes, to play somewhat unparaphrased perhaps on Virgil's expression, will be found to be sufficiently rare. The animals represented on the ancient sculptures have generally the round ear of the Lion, Tiger, and Panther or Leopard; and their general contour is that of the Lion, Lioness, or Panther, and Leopard. See, for instance, No. 30, No. 37, in Room 1; Fragments of Terracottas in Room x.; No. 8 (Bacchus and Ampelus), Room iv.; No. 40 (Liburn, or Female Bacchus), Room vi.; No. 12, Room iii.; and No. 7, Room ii., of the Townley Gallery in the British Museum; and the publication by the Society for the Diffusion of Useful Knowledge, 'British Museum: Townley Gallery,' vol. i. and ii. The Lion's skin, with which, as well as that of the Panther and Roe, he was represented, appears on the colossal statue of Bacchus in the Elgin collection in the British Museum.* In the edition of the Gemma et Sculptura Antiquae, by Gronovius, we find the 'Carro di Baccho,' alluded to in the article Leopardi, a child in a chariot drawn by two round-eared spotted great cats: and, in the next gem figured, 'Tigre di Baccho,' also a Cornelian, we have a round-eared spotted female great cat with a tuft at the end of the tail, which no Panther, Leopard, or Lynx possesses.

In the coin of Septimius Severus, noticed in Captai Smith's Catalogue, between the figures 2 is a Lynx or Panther, illustrating the verse of Propertius:—

*Lynxibus ad column voca Amnidos tua.*

Nor does there occur to us any antient statue, gem, or coin whereon the 'Lynx' of Bacchus is represented with pointed ears tufted at the summit, the characteristic mark of that subdivision of the cats denominated Lynxes by modern zoologists; though we by no means feel sufficient reliance upon our limited experience to consider this negative evidence as conclusive. The animal in the Palæstine Mosaic, with the word 'Lynx' below it, is represented with a tail of considerable length, and cannot be mistaken for one of the animals now called Lynxes; indeed, if we do not err, the Abbé Barthélemy observes that this animal bears a strong resemblance to a horse.

That the Asyli of Aristotle, Ælian, and Oppian was not one of the doubtful animals alluded to, but one of the Lynxes of modern zoologists, there can, in our opinion, no doubt. Ælian (xiv. 6) gives such a description of his Lynxae with the tips of their ears tufted, their leaping on the prey, and their tenacity in holding it, as cannot be mistaken and he quotes two lines of Euripides, to show that the animal which he is describing is the Lynx of that poet. Oppian (Cyneget., iii. v. 84) also gives such an account of h Lynxes as can be referrible to no other animals than those on which we are treating. He speaks of two kinds, notice their preying on hares, and leaping upon stags an oryxes.

Pennant conceived that the European Lynx was th Asyli of Ælian and Oppian, and the Chaus of Pliny; with regard to the former, we think, without due consideration The Caracal comes much more within Oppian's description than the European Lynx. Oppian expressly notices the reddy and the yellow colours of his two kinds, but mention no spots. The localities of the Caracal, combined with the other evidence, make it much more probable that it should be the animal designated as the Asyli by Aristotle and Ælian and one, at least, of the two kinds mentioned by Oppian, in all differences were not, as they well might be, those of climate, sex, or age. Mr Bennett ('Tower Menagerie') think that the Caracal is unquestionably identical with the Lynx of the antients, though the name has been usurped in modern times for an animal of northern origin, utterly unknown to the Greeks, and known to the Romans by a totally different appellation.

The Caracal.

The Boated Lynx. Felis caligata, Bruce, Temm.; F. Lathyrea, Olivier; F. Chaus, Thumb, Geoff. (part); Lynx des Marais (part), Cuv. (Fischer).

Description.—Small, total length about three feet, of which the slender tail measures rather more than one-third, or thirteen inches and a half; ears large, red within, tipped with a pencil of brown short hairs; sole and posterior part of the foot (leg, in common parlance) deep black; upper parts of the body bluish-grey, in some specimens fulvous, clowned with grey and sprinkled with black hairs; lower parts, including the under parts of the neck and breast, reddish; thighs marked with indistinct bands of rather bright brown; two rather bright ruddy bands on the cheeks; tail at its base colour of the back, black at the tip, and with three or four incomplete rings above it, these rings are separated by intervals of a more or less pure white.

The Female has, generally, the tints more yellow. The Young have well-defined dark bands upon their sides.
The Chaus of Pliny (Nat. Hist., viii. 19), which the Gauls called Raphius, with the figure of a wolf and the spots of a partridge, first shown at Pompey's games, can hardly, we think, have been this animal.

**European Lynxes.**

The European Lynx, Felis Lynx, Linn.: *Le Lynx,* Buff.—Fur long, of a dull reddish grey above, with dark spots of reddish grey upon the sides, the spots on the lance rounder and smaller; whitish below, mottled with black. Length about three feet.

This species varies much. In winter the fur is much longer than it is in the summer, and has a hairy appearance in the former season, owing to the long hair being then tipped with greyish white. The tail, which is black at the end, is short, not more than six or seven inches long.

**Geographical Distribution.**—Some authors confine the locality of this species to Europe; others are of opinion that it increases in numbers as it approaches the borders of Asia, which it also inhabits, and abundantly. France is considered its most northern range. It does not seem to be quite clear that *Felis Mercury* of Temminck is a variety of this species. But *F. ceruraria* inhabits the north of Asia, and skins are sent from Moscow. This is supposed to be the *Kattlo* of the Swedes by some, while others consider the Lynx to be the *Gaepe* of the Norwegians and the *Warrel* of the Swedes. If these differences should prove to be well founded, it may be that there are two European species, or at least varieties, one inhabiting southern Europe not higher than France and the warm parts of Asia and the other inhabiting the north of Europe and Asia.

This species is supposed by many to be the *Lynx cerurarius* of Pliny (Nat. Hist., viii. 22) and the Chaus (viii. 19) above alluded to. Both are spoken of as shown in the arena by Pompey, and as coming from Gaul. Dr. Fischer, who is of this opinion, supposes it also to be the Lynx mentioned by Pliny in his chapter 'De Unguis.' (viii. 49).

**American Lynxes.**

The European and northern Asiatic Lynxes and the Canadian Lynx produce the great supply of fur known by the furriers under the name of Lynx. The colder the climate the fuller and the more valuable is the fur.

**American Lynxes.**

We select as our example the *Canadian Lynx, Felis Canadensis* (Geoff.). Dr. Richardson ('Fauna Boraceli Americana') states that the early French writers on Canada, who ascribed to this species the habit of dropping from trees on the backs of deer, and destroying them by tearing their throats and drinking their...
LYN, or LION, a city in France, formerly the capital of the district of Lyons, now of the department of Rhône, situated at the confluence of the Rhône and the Saône, in 45° 46' N. lat., and 4° 50' E. long.; 240 miles in a direct line south-east of Paris; 286 miles by the road through Sens, Troyes, Dijon, Châlons sur Saône, Nevers, Moulins, and Roanne; and 303 by the roads to the towns of the region. It is the capital of the province of Lyons, and is the seat of the bishop of Lyons. The city is situated on a narrow strip of land between the Rhône and the Saône, and is connected with each by bridges. It is a large and important city, and is the seat of a university, a royal college, and a hospital. The climate is mild and healthy, and the soil is fertile.

The common opinion is that Lyons was founded by L. Munatius Plancus, commander of the legions in Gaul at the time of Julius Caesar's death, who settled here the people of Vienna (Vienne), who had been driven from their own home by a revolt of the Allobroges, about 42 B.C. It seems improbable however that a situation so advantageous would have been left to the Romans; and the Celtic name given to the place, Lugdunum or Lugdunum (a name common to two other towns, Lugdunum Batavorum, now Leyden, and Lugdunum Convenarum, now St.

In reference to the allegation that Caesar refers to this animal when he uses the term Catellum, I think this contention is not to be made.

The skin of the Canada Lynx forms a considerable article in the fur trade; the annual importation by the Hudson's Bay Company is stated at from seven to nine thousand. Dr. Richardson says that the natives eat its flesh, which is white and tender, but rather flavourless, much resembling that of the American hare.

The Canada Lynx.

Those who would wish to read of the fabulous qualities generally attributed to the quick-sighted lynx Gaute; the use of some of their parts in the antient 'Pharmacopoeia,' may consult Pliny, Nat. Hist., viii. 38; xxviii. 8; and Ovid, Met., xiv. 415. See also the article Blemmcrine.

LYNX, a constellation of Hevelius, situated directly in front of Ursa Major, the head of the animal being half way between a Ursus Maioris and Capella. Its principal stars are as follows:—

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Lynx, or Le Chat, is the name given to the species; and Le Chien, or the Dog, is the name given to the Canidae or canine family of mammals.
Magnentius, ruler of the Roman empire, made the settlement of the town a Roman colony, and appointed a governor to regulate the affairs of the place. Strabo, writing a few years after, describes it as the most populous city of Gaul, except Narbonne (v. 192, Casaur.).

Both Tiberius and Caligula appear to have favoured the town. The latter visited it, and instituted games professionally in honour of Augustus, about A.D. 40. The emperor Claudius, himself a native of Lyon, raised it from the rank of a municipium to that of a colony, in the strictest sense of the term, and regulated its local government. But its greatness received soon after a terrible blow; it was utterly destroyed in a single night by fire, originating, it has been conjectured, from an accidental cause (A.D. 55), and according to other calculations, about A.D. 64 or 65. The rebuilding of the city was promoted by a grant from the emperor Nero, to whom the citizens manifested their affection and fidelity in his downfall. Upon Vitellius assuming the imperial purple, they embraced his cause; and he stayed some time at Lugdunum on his way from the Rhinian provinces to Rome. Domitian, afterwards emperor, came to this city on the overthrow of Vitellius, to establish the authority of his father Vespasian in Gaul.

In the contest of Claudio Albinus, Septimius Severus Lugdunum became the scene of contest. In an engagement near this town Albinus was totally defeated and slain (A.D. 197). Lugdunum, which had afforded a retreat to the vanquished, was pillaged by the victor, who put most of the inhabitants to the sword, and burned the town, which Herodian describes as being then large and wealthy. In the reign of Probus, Proclus was elected emperor by the people of Lugdunum, who had been ill-treated by Aurelian, and were fearful of the severity of Probus. The latter however defeated Proclus, and caused him to be put to death (A.D. 280).

The usurper Magnentius, having been defeated by Constantius, sole survivor of the sons of Constantine, took refuge in Lugdunum, which was seized by the townsmen, and subsequently surrendered to the emperor. The usurper Maximus, was overtaken and slain at Lugdunum (A.D. 383). In the beginning of the fifth century, in the reign of Honorius his successor, the Burgundians defeated themselves of this town and of the south-eastern part of Gaul, under the pretence of the emperor, who employed them to oppose other barbarians of a fiercer character. (Burgundians.) On the overthrow of the Burgundian kingdom, Lugdunum came into the power of the Franks.

Lugdunum, during the Roman period, occupies a considerable place in ecclesiastical as well as in civil history. The Gospel had been early introduced into this part of Gaul, and here a severe persecution raged in the reign of Marcus Aurelius Antoninus (A.D. 172 or 177). The churches at Vienna (Vienne) and Lugdunum sent a relation of their sufferings to those of Asia and Phrygia. This account ascribed by some to Irenaeus, 'is written with simplicity, and is one of the most affecting passages in the history of Christianity.' (Hist. of the Christian Church, Library of Useful Knowledge.) Pothinus, bishop of Lyon, and perhaps the person who introduced the Gospel into these regions, was one of the martyrs in this persecution. His successor was Irenaeus, one of the eminent of the early church, A.D. 172-377. The see of Lyon became a principal see, and was the subject of a great number of disputes and persecutions. It was the seat of a council in A.D. 314, at which it was decided, this church should be under the jurisdiction of the bishop of Rome. Under the kings of Burgundy, on the division of the Frankish kingdom among the granddukes of the Carolingian, Lyon, with the district of Forez, fell to the lot of the emperor Lothaire, and in the subsequent division of his states (A.D. 855) it fell to Charles the Carolingian, king of Provence, who made it his usual residence. On his death (A.D. 863) it was seized by Charles the Chauve, king of France. On the re-establishment of the kingdom of Burgundy by Charles the Fat (A.D. 879) Lyon again passed to Lothaire. In the troubled period of the later Carolingian kings of France, Lyon was subject alternately to that kingdom and to the kingdom of Burgundy Transjurane. It was in these troubled times that the counts or governors of Lyons were established, and, occupying an hereditary sway, became the city of Lyon so much as over the districts of Lyons and Forez, and Beaujolais.

From about A.D. 955 Lyon was under the kings of Burgundy Transjurane, and, upon the union of that kingdom with the Germanic, became part of the domains of the emperors. Under the kings of Burgundy, the counts of Lyons exercised the functions of governors. The city was not however considered as a part of their hereditary fief; and in the reign of Robert III, surmounting the difficulties of time, he was in the kingdom of France, and the lordship of the city, which appears to have been annexed to the see. The emperor Frederick Barbarossa (A.D. 1157) confirmed the temporal jurisdiction of the archbishops, extended it over all that part of their diocese which was in the kingdom of France, and confirmed the laws of the city. The jealous of the then count of Forez, and stirred up a war between him and the archbishop. Soon after this time Waldus, or Waldensis, one of the reformers of the church in his age, lived and preached at Lyon.

At Lyon was held, A.D. 1215, a general council, in which the pope Innocent IV. pronounced excommunication and deposition against the emperor Frederick II. On the ground of sacrilege and heresy. A crusade for the recovery of the Holy Land was agreed to, and it was determined to render aid to the emperor Baldwin II. of Constantinople.

The citizens of Lyon at this time appear to have formed a powerful body. There was considerable trade carried on between this town and Spain, especially through the Rhone and Saone. The inhabitants were by no means satisfied with the government of ecclesiastical rulers. Learning that Philippe II., king of France (St. Louis) being one of the arbitrators appealed to in order to hear these disorders, his successors and bishops. In the year A.D. 1274, Frederick IV., the king of France, at the instance of the French council, received the citizens of Lyon, at his especial safeguard and protection. The archbishops engaged stoutly for their rights; but in the reign of Philip V., the regular authority was still established. In the year 1274 another council was held at Lyon: at which the Greek church was professed 31 V., to the Latin church, and several other important acts brought under notice.
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The remoteness of Lyon from the centre of the German empire, and the other more prosing occupations of the emperors, prevented them from interfering in the contest between the citizens of Lyon and their ecclesiastical governors, and the withdrawal of the city from the imperial government was followed by the interference of the civil and military authorities, and scarcely any opposition from the emperors. The political authority and a portion of the judicial authority were in the hands of the kings of France, and were exercised for them by officers appointed with the title of gardians; by the bailiffs of Mâcon, who were successors of Lyons, and subsequently by the governors of the province of Lyons. A portion of the judicial administration remained in the hands of the archbishops, and another portion in the hands of the municipality (or consulate, as it was termed), which constituted, down to the last century, a tribunal distinguished by its upright and enlightened decisions. Lyon continued to increase in population, wealth, and commerce. Its institutions were free; the citizens elected their own magistrates, controlled the receipts and expenditure of the municipality, and were exempt from the jurisdiction of any courts except those established in the city.

In the year 1362 Jacques de Bourbon, count of Maine, and his son Pierre, with several other nobles, were defeated and mortally wounded near Lyon, and their houses were ruined for the time being. France. In the conflict carried on with these marauders, the aqueducts which had conveyed water to the Roman Lugdunum, and the Roman bridge of Francienville, were ruined.

In the former bed of the river during the sixteenth century, Lyon suffered much at the hands of the Huguenots; but recovered its prosperity in the seventeenth and eighteenth centuries. The execution of Cin Cesar and De Thou, beheaded by order of Richelieu, A.D. 1642, took place in this city.

In the year 1793, during the government of the convention, the people of Lyon rose against the tyranny of the revolutionary club which had been established in the city; and seizing the Hôtel de Ville (or town-hall), condemned the archbishops to the scaffold for the purpose of putting him to death. The population of Lyon in 1788 has been estimated at 180,000: other accounts make it to have been only 121,000 in 1791. It is likely that the troubles of the Revolution had diminished the prosperity, and with it the population of the city, and that the difference in the two statements makes it likely that one comprehended a larger portion of the environs than the other. Against this great city, the Convention sent an army of 60,000 men with a view of suppressing the revolt along the Rhône, and the resistance: 10,000 men engaged in the defence under the count de Précy, women and children caught the spirit of resistance, and the wealthy merchants and landowners dev- ered their fortunes to the providing of necessaries. The revolt was quelled by the troops of the Convention, and the count de Précy, succeeded in reaching Savoy. The victorious army took possession of the new defended city, and a fearful train of cruelties followed for five months, under the direction of Couthon, Collot d'Herbois, and Maingnet. The guillotine was rendered permanent; and its opera- tions were accelerated along the line of the Rhône. The number of those who fell on the guillotine, and the number of those who fell before it, is not given in the annals of the Revolution. It is known that there were 50,000 women, and 20,000 men, killed in the garrison of Lyon; it is not known how many were killed in the population, but there are no means of knowing. The city was taken; the rebel leaders were executed; and the revolution in the Rhône was put an end to. Lyon, the capital of the Rhône, was taken by the Convention, and the population of the city, together with the new conquered territory, was incorporated into the French state.

This dreadful blow, together with the long war which followed the French revolution, caused the commerce and manufactures of Lyon to languish. In 1806 the population was estimated at less than 90,000, only half its population in 1789. During the conflict between the Rhône and the Isère, from Elba in 1815, the city of Artois (afterwards Charles X.), brother of Louis XVIII., the duke of Orleans (the present king of the French), and Marshal Macdonald, hastened to Lyon: but on the approach of Napoleon, the populace and the army raised the cry of ' Vive l'Empereur!' and the princes retired. Napoleon took possession of the city, and issued a decree annulling the chief political changes made during his absence.

In 1834 Lyon was the scene of great disturbances. Unrest for the protection of their interests had been formed by the artisans, who took the name of Mutualists; and a reduction of wages by the masters occasioned a general turn-out. Political feelings mingled with the irritation caused by these circumstances, acts of disorder occurred, and the interview of the civil and military authorities, and senators, was conducted with the determination to bring the parties arrested to trial led to an insurrection. The rioters fortified themselves with barricades, took possession of the suburbs, and the place was contested for two days with a loss of nearly 200 men on each side, and more than that number to the insurgents, who, finding it hopeless to continue the contest, laid down their arms.

Lyon is situated at the confluence of the Saône with the Rhône. The general direction of the Rhône previous to the junction is from east to west, but in the city and vicinity its course is from north-north-east to south-south-west. The general direction of the Saône is from north to south, but it makes a bend, convex to the east, round the base of the hill Fourvière just before its junction with the Rhône. The two rivers enclose between them a long tongue of land extending to the south or south-south-west, on which part of the city is built. The junction of the streams formerly took place just south of the then existing ramparts of the town, and the point of junction was an island called Mognat, or Mognot, and several short canals were made between the island of Mognot and the shoals with the main. The prolongation of the bed of the Saône between the former and present points of junction was formed on the western side of what had previously been the bed of the united streams. By this great alteration, a large extent of ground was gained, over which new streets and buildings are continually extending. Another considerable part of the city is on the hill Fourvière and at the base of it, along the right bank of the Saône; it is surrounded by the remaining fortifications on the south side of part of the city which is between the two rivers. These fortifications run along the hill of La Croix Rousse, which rises on this side, and which occupies the whole of the interval between the Rhône to the Saône. The remainder of the city, adjacent to the part on the right of the Saône, are the three faubourgs, or suburbs, of St. Irénée, St. Just, and St. Georges, or La Quarrante. On the north-west, extending towards the junction of the Rhône and the Rhône, the city occupies the island of Vaise, which forms a distinct commune, or municipality. On the north is the new commune, or municipal district of La Croix Rousse, on the hill of that name, comprehending the suburbs of La Serrin on the left bank of the Saône and the right bank of the Rhône. The mouth of the Rhône is the faubourg of La Guillotière, which forms with the quarter Les Bouteaux another distinct commune, or municipal district. South of the city is the new quarter, on the land gained by altering the bed of the Rhône, called, by the architect who planned it, the Presqu'ile (or Peninsula) Perrache.

The Rhône has a medium breadth of about 650 feet. Its current is very rapid, and it is liable to sudden and great inundations; to prevent the disastrous effects of which, an embankment has been formed to protect the new district of La Guillotière. There are three bridges over it: the Pont Morand, a wooden-bridge; the Pont Charles X., which has the foundation of the piers of stone and the other parts of wood; and the Pont La Guillotière, a stone bridge, leading to the suburb of the same name. On the right bank of the river is a range of quays, not much used for commercial purposes, and partly planted with trees; south of the city, on the same bank, an avenue extends along the Presqu'ile Perrache, and another avenue, extending northward from the quay, forms the commencement of the road to Bourg-en-Bresse and Geneva. These quays and avenues form a tolerably direct line of more than three miles in length. There is a quay on the point of land near the 'Cours Borel,' and several public gardens and houses of entertainment much frequented on holidays.

The Saône has a slower current and a more winding course than the Rhône. It skirts the hill of Fourvière,
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projecting crag of which stretches down to the river. A passageway was made by the Romans along the bank by cutting away part of this crag, which derived from that circumstance the name of Petra Exigua, now Pierre-Seine. On the summit of this crag stood a Gothic castle, long the residence of the archbishops when lords of the city. After the war of the French Revolution, the castle was made a prison; and demolished after the siege of 1793. The crag, which consists of granite rock, is perpetually diminishing, being quarried for building. Both banks of the Saône are lined with houses and have several temples, desks for boats. It is crossed by seven bridges in the city. The Pont de l’Archevêché (formerly Pont de Tilsit) and the Pont du Change are of stone, and are remarkable, the first for its elegant architecture, and the second for its antiquity. The Pont de Serin and the Pont d’Alley have the foundations of the piers in stone, the rest of wood. The Pont St. Vincent and the Pont Volant are wholly of wood. There is one suspension iron-bridge and it was designed to throw another over from the suburb of Vaise to that of Serin. We know not if this design has been executed.

Besides these seven bridges, there is one below the city, partly of stone and partly of wood, just at the junction of the Saône with the Rhône. Over this bridge the railroad from Lyon to St. Etienne passes. The traffic by boats on the Saône is very considerable.

Between the Rhône and the Saône, in the Presqu’ile Perrache is a cut with a basin for boats; another large basin is in the suburb of Vaise on the Saône.

Theors antient theu Rousx was partly of the town has narrow, wet, and dirty streets, paved with inconsiderable round or projecting stones, and lined on each side by a row of curb-stones, designed not for footpaths, but to preserve the shops from accident by carts or other carriages. The houses are old and gloomy, and seven stories high are placed in yards into the which the rays of the sun rarely penetrate. They are chiefly built of stone, and are of solid construction. In the newer parts of the town are some handsome streets. The quays are lined with good houses; those on the bank of the Rhône are generally made of wood. The whole number of the streets was variously estimated ten years since at from two hundred and fifty to three hundred. The squares and other open spaces amounted to near sixty. The principal is the Place Bellecour, otherwise Place de Louis de La Grand. It is above 300 yards in length and has a varying breadth of from about 200 to 240 yards; it is planted with lime-trees, and has in the centre a fine equestrian statue of Louis XIV., in the place of one destroyed at the time of the fire. In the same place is a statue of the Place, and the fine houses which surrounded it, were destroyed after the siege of 1793, and the Place remained long in ruins. In the north of the city is the Place des Terreaux: and at the southern extremity the Place Louis Pasteur. The quarters of the two latter are the residence of the most wealthy people; there are many good houses in the quarters of St. Chir, Les Terreaux, and Perrache; the quarter of St. Jean, on the right bank of the Saône, is occupied principally by the members of the bar. Lyon is remarkable for the contrast frequently presented by the mean bowels which may be seen in immediate juxtaposition with the most splendid mansions.

Of the public buildings the cathedral is one of the most remarkable. The western front, which is praised by state for its magnificence, is on the whole heavy, but it has three richly ornamented doorways, and over the central doorway a fine circular window. The interior of the building is of simple but striking architecture. In this cathedral there is a square clock which shows the day, the hour, the minute, and the second; the sun’s place, the phases of the moon, and the saints’ days of the calendar. It is now out of repair. The church of the Chartreux, on the legation, La Croix Rousse in the northern part of the city, has a good dome, which is the highest in the city, and that of St. Irénée (Irenæus), rendered a mere shell by the siege of 1793, has a handsome front; that of Enay is remarkable for four granite columns which support its cupola, and that of St. John, from a Roman Temple, dedicated to Augustus, that occupied the same site; that of St. Nicolas is of Gothic architecture with a Grecian portico, the work of Phibert Deborne; that of the Collège has a fine nave, and that of St. Just is a modern building in good taste and of elegant proportion. The churches of Lyon generally are but little worthy of notice. The Protestants occupy a church a building originally designed for an exchange. The archbishop’s palace, though it has some fine rooms, has little exterior beauty. The Hôtel de Ville, or town hall, is perhaps the finest public building in Lyon. It has a front in the style of the brick-towners from the fourteenth century. It was rebuilt in A.D. 1646-55, by Simon Martini, and is considered the finest building of the kind in Europe, except that of Amsterdam. It forms one side of the Place des Terreaux, another side is formed by the former Benedictine abbey of St. Eustache, and Padula de Courbon, now a prison. It is used as an exchange, a repository for several museums or collections of objects of science and art, a place of meeting for several learned societies, a school of instruction in drawing, anatomy, &c, and for other purposes.

The prefect’s office, formerly a Dominican chapel, is remarkable rather for its extent than its beauty. It is a tolerably extensive garden. The Hôtel Dieu, or hospital, and the Hôpital de la Charité, destined for foundlings and for the aged and invalid poor, front the banks of the Rhône: the former is a building of modern appearance, with a fine dome in the centre. There are several theatres; the Grand Théâtre built by Soufflot has been lately replaced by a new building.

The population of Lyon in 1851 was 145,673: this number probably includes the inhabitants of Vaise, La Croix Rousse, and La Guillotière. In 1831 the population of Lyon was 133,715; that of the commune of Vaise was 4237 (of whom 3596 were in the town); that of the commune of La Guillotière was 19,294 (of whom about 12,000 were in the town); and that of the commune of La Croix Rousse was 24,781. In 1836 the population of Lyon was 136,984, and if we estimate the increase of population in Vaise, La Guillotière, and La Croix Rousse, the total population of the city of Lyon is now about 150,000. The greatest manufacturing town in France. Its staple manufactures are silk, which is highly esteemed for the lessening of the complexion of the colour; and Fabrics. Mixed fabrics of silk and cotton and of silk and wool manufactured; also shawls, crapes, silk stockings, gold and silver stuffs, ribands, and embroidery. The greater part of the silk produced in France is worked up in the towns of Lyon and St. Etienne, and is consumed in France and exported. The other manufactures are iron, cotton, paper, wood, books, and the manufacture of printed cottons, paper hangings, silk flowers, iron goods, plate, jewellery, glass, and hardware. There are breweries and carriages’ shops. Trade is carried on at home and abroad. The staple manufactures are the silk and the manufacture of printed cottons, paper hangings, silk flowers, iron goods, plate, jewellery, glass, and hardware. There are breweries and carriages’ shops. Trade is carried on at home and abroad. The staple manufactures are the silk and the manufacture of printed cottons, paper hangings, silk flowers, iron goods, plate, jewellery, glass, and hardware.
LYRICAL

characteristic of the inhabitants. The beautiful environs of the town are studded with country-houses; and on holidays the vast population pours out of the town in swarms to enjoy a purer air. Science and art are more cultivated than in most other towns; they are however valued chiefly for their bearing on commerce and manufactures. The town is the seat of an Académie Universitaire, the circuit of which comprehends the departments of Ain, Loire, and Rhône. There is a public library of 92,000 volumes and about 500 (some authorities say 1500) maps. There are schools of theology and medicine; a seminary for the priesthood; a royal academy of sciences, belles-lettres, and arts; and various other institutions for the promotion of knowledge. There are three hospitals, a subscription dispensary, a deaf and dumb asylum, and many other charitable institutions. The archbishopric of Lyon (now united to that of Vienne) is very ancient. The diocese comprehends the departments of Rhône and Loire: the suffragan see of archbishop is the bishop of Autun, Langres, Dijon, St. Cloud, and Grenoble. There is a Protestant consistory and a Jews' synagogue. The Cour Royale of Lyon has under its jurisdiction the departments of Ain, Loire, and Rhône: there are two prisons in the town, and several subordinate judicial courts and offices. There are a mint, a royal powder-refining-house, and a royal snuff manufactory. Lyon is the capital of the nineteenth military division, which includes the departments of Rhône, Loire, Cantal, Puy de Dôme, and Haute Loire.

Among the eminent natives of Lyon were the Roman emperors Claudius and Caracalla, the poet Sidonius Apollinaris, the archbishop Philibert Deformes, who built the Tuileries; the botanist Jussieu, and Murech Buchet. The province of Lyon comprehends an area of 401 square miles; it had, in 1831, a population of 292,376; in 1836, of 330,644. It contains 126 communes, and is divided into 66 cantons, or districts under a justice of the peace. LYONNAIS, or LYONNAISÉ, a province of France previous to the Revolution, and retaining its name, the City of Lyon, which was the capital of it. It was bounded on the north by Bourgogne; on the east by the principality of Dombes, the district of Bresse, and the province of Dauphine; on the west by the French province of the department of the Loire; on the south by the districts of Le Vivarais and Le Velay, in Languedoc; on the west by Avignon and the Bourbonnais or Bourbonnais. It was subdivided into three parts, Le Forez on the west and south, Le Beaujolais or Beaujolais on the north, and the Lyonais proper on the east: Beaujolais; Forez; and comprehended several towns besides Lyon, as Beaujeu, Villefranche, Feurs, Montbrison, Roanne, St. Etienne, L’Arbresle (formerly La Brosse), Theillay, etc. Of all these it is most proper to speak of the departments of Rhône and Loire. The province of Lyons became, in the anarchy which preceded the extinction of the Carlovingian dynasty, an hereditary county; but the county does not appear to have included the city of Lyon. The partition of the county among the different branches of the family led to the separation of the lordship of Beaujolais and the county of Forez. It is not clear whether the district of Lyons proper passed with the city of Lyon under the government of the archbishops of that see, and subsequently of the French crown, or whether it was subject to the county of Forez. The former is most likely.

Lyonsia was the country of the Scyrians. It was included in the Roman province of Lugdunensis Prima. It was subsequently attached to the Roman province of the Franks. It does not appear that any part, except the city and environs of Lyon, was incorporated with the German empires. The counts of Lyonsia and Forez were vassals of the French crown.

LYONSIA, a genus of Conchiferous belonging to the Myasian group. Mr. G.B. Sowerby has described two species:—

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LYRA. [Ornithology.] [MENURA.]

LYRE (Lepis), a musical instrument of the stringed kind, known, under various names, from the earliest historical period. The Greeks invented it, passing it on to the Romans, some to Apollo; but it is possible that they may have had it from the Egyptians, and the Egyptians from Asia. Indeed Holy Writ leads us to conclude that it was of antediluvian origin. Jubal, the seventh only in descent from Adam, was 'father of all such as handle the harp and organ;' and as by the word harp we are to understand either the lyre itself, or some instrument analogous to it, we must, on such authority, grant to the son of Lanceh the merit of being its inventor. In our version of the Scripture, psalm (LXX), is rendered by the same word, while the Septuagint and Vulgate give the Hebrew term a Greek form—εὐθυμια, cithara, a word generally, though we believe erroneously, supposed to be synonymous with lyra or lyre. Moreover, we are at some distance from our opinion that Lyre and Cithara (or guitar) were generic terms; the first being the parent of all instruments of the harp kind, having no neck, or finger board; the last, of all those furnished with a neck, and which finger-board probably was divided by facts.

Guitar. Harp.

It is true that in all the remains of Grecian art, no instrument with a neck is to be found. Artists perhaps preferred the more compact and elegant form of what is now called the Grecian lyre. The same taste descended to the Romans; witness the statue of Handel in Vauxhall Gardens, as Dr. Burney well remarks. Montfaucon tells us that he had examined the sculptured representations of six hundred ancient lyres and citharas, and found not one with a neck. But had the learned father—who was a most excellent and indefatigable antiquary—lived in the present day, he would have met with abundant evidence in Egypt to prove that instruments with necks—instruments of the guitar kind, such as were subsequently called lutes—existed at least three thousand years ago. The three-stringed guitar, says Mr. Wilkinson (Manners and Customs of the Antique Egyptians), was in use at the earliest period of the Egyptian history; 'those that the pyramids are apparently of a date long previous to Orosius, or the arrival of the Pharaohs.' And in the Euphrates' splendid world 'I Monumenti della Egitto e della Numidia are many engravings, some coloured, exhibiting instruments of great antiquity, resembling in essential points the modern guitar, or lute, with a neck, but this much elongated. The most ancient Grecian lyre—said to have been formed by Mercury from the shell of a tortoise, and of which the subjoined is a representation, as given by Mercenne—

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good reason for denying to him what has commonly been considered his right, that of presenting us with the pure type and example of a lyric poet. With almost as much reason might he be called an epic writer, for many long passages occur which he does not retain in lyric poetry, but in the path of narration, while in others again he is all but a dramatist. Thirlwall has observed too, that even of his one certain that his genius was unequalled, still it could not replace the freshness which we might expect to find in the earlier glories of the lyric vein, nor that peculiar charm of which distinguished each of the other poets, nor that which belonged to the several schools formed by the great tribes or branches of the nation. We have thus to deplore in Tyrseus the loss of writings which kept up the patrimony of a Homer and Archilochus, and in Hipponax and Archilochus, the first poems on the fruitful subjects of love and feasting; and in Minnernus the Greek elegy, that offspring of the sadness which resulted from the fleeting nature of human enjoyment. But most of us have to regret that scarcely any remains of that link between epic and lyric poetry were the origin of Greek tragedy. This was perhaps the most uniform style of lyric poetry among the Greeks, the other kind being that the most part of the particular individual imitations, which gained popularity in proportion as they found sympathy, much in the way in which modern poetry makes its way into notice.

Ulrici, in his very elaborate work on the history of Greek poetry, gives as the principal sources from which lyric poetry was derived—religious worship, and the mixed feelings of the people; the first of which elements is traceable in one of the two kinds of epic poetry, which we may call *hieratic*, while the second is in that phraseology is especially the case of Callinus. Perhaps the Greek lyric into the Doric, Ionic, and Ionian kinds: correspond nearly, the first to what is to be found choruses; the second to love-songs, such as Sappho's drinking-songs, or scolia; and the third to the elegy, which figured among the schools of Callinus, Hipponax, and others. We have no space to do more than notice his division of the subject, but the whole work repays a far closer attention.

It has been remarked that both in epic and in lyric poetry the Greek added new ideas, or altered the old, to the school of poets; what in Greece there was a regular progression from epic to lyric; for in each of the schools, each of which supplied many individuals great enough to form a principal figure in each class. Virgil and Lucretia are the types of Roman epic poetry, and Horace and Tibullus and Ovid the types of a Latin lyric poet. The firsts, which is the history of Roman lyric would be little else than to enumerate every man who wrote verses from Ennius downwards, and almost every one of them attempted that as well as his friends. The whole of which is like a Greek model, even the most original of the Latin having borrowed his metres, though he might make something else his own.

It might perhaps be hard to one to be told that a branch of lyric poetry, and not expressing in any more of Roman lyric is satire. But a careful review of the section with which we started cannot fail to explain. Satire is essentially lyrical or subjective in its nature; the Roman satire more so than the Greek, insomuch as it partakes far less of the nature of lampoon or burlesque. But the words may mean anything, but we should be inclined to suppose that it took much more of the nature of lampoon than satire. To the satire we may add its powerful auxiliary epigram, the same in name but very different in effect. To the satiric spirit, which sought rather to call a name, or even mere epithet. The Horatian lyrics merged in the later ages of empire into a species of poetry much though numberless, neglected, we mean the rhyming verses of the mantis, which in much greater and simpler expression mean almost nothing. They are curious as affording the best examples...
...the transition from scanning to accent, that is, from the metre to the modern rule of versification.

Every lyric poem is late in its full development, for to call our ballads lyrical is a misnomer, seeing that the prose and poetical romances often give exactly the same story in another shape. We need go no further than the ballad "Mort d'Arthur," so well known to readers of Percy's "Reliques," and to those who have perused Shakspeare's sonnets. In "Lycidas," "II Penseroso," and "L'Allegro," we see almost the first, and perhaps the most beautiful examples our language can boast. The prevalence of French taste until the revival of poetry at the close of the last century gave so artificial a character to the works of Dryden, Pope, and their successors, that we can hardly give the title of lyrical to any of them excepting the sires and a few fine odes. In our own day Wordsworth and Coleridge are too well known to require that we should point out how exclusively lyrical is the tendency of their works. Shelley has combined more of what is called sensuous beauty with the rest of the qualities requisite to make up a fine poet; and, among living poets, Tennyson may perhaps be ranked as the greatest promise of lyrical excellence, although he have not, as Shakespeare and Milton, had so little as has so many of the redundancies of a young writer, that it is hard to predict with certainty his future course.

It is natural to anticipate what may be the course of poetry in the future. In the meantime it seems probable that probability is on the side of its taking a lyrical or subjective character. Novels have shut out the drama, and epic poetry is utterly at variance with the feelings of the age; so that if our children are to have any poetry at all, it must apparently take largely of a lyrical character, and that probably not unmixxed with satire, of which, since the 'English Bards and Scotch Reviewers,' we have had scarcely a specimen.

"Uric's Geschicht der hellenischen Dichtkunst; Diction's Hist. of Roman Literature; Quarterly Review, articles on Pindar and Horace."

LYRICS are those verses which are commonly used in lyrical poetry. Such are those of Pindar, of Horace's odes, and of the tragic and comic choruses. They are generally short, and, in order, as is said to agree better with the time of any music which might have been intended to accompany them. The old grammarians divided all verses into those in which the metre was repeated in each line (καὶ ἐκ τούτου), such as hexameters, iambics, and trochees, and those which varied in each line (καὶ ἐκ τοῦ τριάδος) in the case of Sapphics or Alcaics verses, or choric strophes. The latter division contains almost all the lyric metres known, including nearly all Horace's odes, all Pindar's, and all the choruses and even anapaestic verse. Of these structures the longer were made, into longer, such as Pindar, Stesichorus, Simonides, and the Greek dramatists employed; and shorter, such as those of the earlier Ionian and Æolian poets, of their imitators, and of Seneca, besides rare examples in the Greek dramatists.

Herrmann further distinguishes the longer strophes into Dorian, Æolian, and Lydian, of which he gives examples from Pindar to prove that the first was used where impromptu, the second where versification, the third to give a notion of rapidity and vehemence, and the third as possessing part of the qualities of each.

A question has arisen, and it is at all events a curious point, why lyrical poems are generally divided into lines so unequal, and the presence of this irregularity in both Greek and Roman poetry is certain, and it is not explained by saying that they were sung to an accompaniment, for surely there is just as much reason to suppose that Homer's long hexameters were chanted as Anacreon's short iambics, and Pausanias might as well be adapted to one as to the other. Perhaps it is better accounted for by considering that a lyrical poem does not consist of descriptions, where the same scene may be expressed in many ways, but in thoughts, which, to be striking, must be terse. Take for example the following verses—

* The Heinsius's chorus in 'Der Freischiitz' is perfectly adapted to such

Hesiod would probably have spun them out into five or six hexameters, inserting epithets and expanding at pleasure, but confining each from the commencement of a new verse a moral sentiment in which the hearer is supposed to agree, into the inculcation of a precept of prudence which he is to follow. (Hermann, "Elemta Doctrinen Metris.")

LYRICO-PHILUS. [IGONARDI.]

LYRIS. [TROIANIDES.]

LYS. [BELGIUM, SHELDER.]

LYSANDER, a Spartan, who rose to eminence towards the end of the Peloponnesian war, and was placed in command of the Lacedaemonian troops on the coast of Asia Minor, c. 406 B.C. He conducted the fleet against Athens, and, after some of the most desperate engagements in naval annals, defeated the Athenian fleet, commanded by Antimachus, as lieutenant of Alcibiades, at Notium. In September, 406, he was superseded by Calliarchus; who was defeated and captured by the Athenians, and a demand he had made for the release of Lysander was not satisfied. It was thought that Lysander might be re-appointed. It was contrary to Spartan law to entrust the fleet twice to the same person; but this difficulty was evaded by nominating another person commander-in-chief, and sending Lysander to Asia Minor, with the command in the meantime. He also marched into Attica and invested the city, which, unassailed, was reduced by the force of famine. The capitulation being settled, c. 404, Lysander had the proud satisfaction of entering as a victor the Persian city, uninvited by the presence of a Persian invasion. His services and reputation gained for him a corresponding weight in Sparta; and on occasion of the contested succession his influence was powerful in raising Agesilaus to the throne. He accompanied that eminent statesman and soldier during the greater part of the campaign, and the great fortitude and coolness with which he conducted the base and desperate struggles of that fatal war, have been wire the force which he collected dispersed, the war came at once to an end, with no credit to the Lacedaemonians, c. 393.

It is said that, urged by ambitious hopes, he meditated a scheme for abducting the Persian prince, the youthful son of Darius, and rendering the Spartan throne elective, and that he had tampered largely with different oracles to promote this scheme. The contemporary Xenophon however makes no mention of this rumour. This subject has been well discussed in the fourth volume of the 'History of Greece.' [ALCIBIADES, ATHENS, AGESILAUS.]

(Plutarch's Life of Lysander; Xenophon: Hellenica.)

LYSIAS, one of the ten Athenian orators, was born at Athens, c. 438. His father Cephalus was a native of

* In the following way—

'Ο Περὶ τός τούτου ἠκούων ἀνέδρασιν, λοιμώς ἐκ μελήσιον καὶ ἀπιστικά μονοίν ὤλων ἔνθες ἡ τοῦ ἔρωτος ἐκ οὐκ ἀκολούθησιν τοῦ ἔρωτος. '

Kαι τοῦ γράμματος πλούσιν ἄδεων πάροικον τε, ὀπλαζόμενον τοὺς ἱπποὺς ἔρως μετά τών ἄνθρωπον.
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LYS

Syracuse, who settled at Athens during the time of Pericles; he was a person of considerable wealth, and lived in intimate terms with Pericles and Socrates. His house is supposed to be one of the celebrated dialogues of Plato's 'Republic.'

LYSias, at the age of fifteen, went to Thurium in Italy, with his brother Polemarchus, at the first foundation of the colony. Here he remained for thirty-two years; but in consequence of his supporting the Athenian interests, he was obliged to leave Italy after the failure of the Athenian expedition in Sicily. He returned to Athens n.c. 411, and carried on a public life with his brother Polemarchus, with whom he was connected in an extensive manufactory of shields, in which they employed as many as 120 slaves. Their wealth excited the curiosity of the Thirty Tyrants; their house was attacked one evening by an armed force, while Lysias was entertaining a few friends at supper; their property was seized, and Polemarchus was taken to prison, where he was shortly after executed (n.c. 404). Lysias, bribing some of the soldiers, escaped to the Piraeus, and sailed from thence to Megara. He has given us a graphic account of his escape in his oration against Eristathecus, who had one of the Thirty Tyrants.

Lysias actively assisted Thraasybulus in his enterprise against the Thirty; he supplied him with a large sum of money from his own resources and those of his friends, and introduced him into the assembly of soldiers. Thraasybulus, on his return for these services Thraasybulus proposed a decree, by which the right of citizenship should be conferred upon Lysias; but in consequence of some informality this decree was never carried into effect. He was however allowed the patronage of the state, which was sometimes granted to resident aliens (namely, *oikistes*). Lysias appears to have died about n.c. 378.

The author of the life of Lysias, attributed to Plutarch, mentions four hundred and twenty-five orations of Lysias; two hundred and thirty of which are proved to be genuine. At present there are thirty-four extant, attributed to this orator. But some of these may not be genuine; and at least the 'Epithaphius' bears strong internal evidence of being forged by other hands.

Dionysius of Halicarnassus has written a laboured essay on the style and merits of Lysias. He allows him almost every excellence except those of sublimity and the power of strongly moving the passions. 'His style,' he observes, 'is so well adapted to show the power of art as to represent the truth of nature.' In narrating events or circumstances, Dionysius considers him as superior to all the orators, and as the rule and model in this department of the art. The 'Apology for the death of Eristatecus' is a pattern of simple and forcible narration.

According to Suidas and other ancient biographers, Lysias also wrote some treatises on the art of oratory (which he is said by Cicero ('Brut., c. 12) to have taught), and discourses on love. There is still extant a treatise on love, which has not been attributed to Lysias, but which has been edited by Haiken, Leip., 1827, but this work evidently belongs to a much later period in Greek literature.

The best edition of the text of Lysias is by Bekker. Useful editions have also been published by Taylor, 1738; by Foerster, 1829; and by Rueckert, 1861. Lysias has been translated into French by Auger, Paris, 1783, and into English by Gyllies, together with the orations of Isocrates, London, 1778.

Dionysus of Halicarnassus: *Life of Lysias*, attributed to Plutarch; Photius, C. 261; *Life of Lysias*, prefaced to Taylor's edition.)

LYS'DICE, Savigny's name for a genus of *Dorsi-brachiatae Anelleida* (*Dorsibrachiatia*), which, with jaws like those of *Euryx* (Cuv.), or even more numerous than in that form, and often unequal in number, have only three tentacles, and cirrhi for branchiae. See Savigny (*Ec. Annel.,* and Cuvier (*Regne Animal*).

LYS'I'MACHUS, one of the officers of Alexander the Great, and of the most notorious of his generals. (Justin, xv. 3.) In the general distribution of the provinces, satrapies, to the chief Macedonian officers after the death of Alexander, Lysimachus received Thrace and the neighboring countries. It was not however without difficulty that the province of Thrace, which had been assigned to him; he was vigorously opposed by Seleucus, king of Thrace, and other native princes, and it was some time before his power was firmly established in the country.

In n.c. 314 he joined Cassander, Ptolemy, and Seleucus in their endeavour to check the power of Antigonus (Arnou- rinus, p. 162), but he does not appear to have taken an active part against Antigonus, in consequence of the revolt of many Thracian tribes who had been excited by Antigonus to make war against him. The peace, which was made between the contending parties n.c. 311, lasted only for a short time and the war was continued with various success till the conquests of Demetrius, the son of Antigonus, in Greece, roused the confederates to make more vigorous exertions; and Lysimachus was accordingly sent into Asia in n.c. 305, where he took seven places, and acquired immense plunder. Antigonus hastened to meet him, but could not force him to a battle. In the following year Lysimachus, having formed a junction with the forces of Seleucus, met Antigonus at Ipsus in Phrygia, where a bloody battle was fought, in which Antigonus was killed and his army entirely defeated.

The dominions of Antigonus were divided among the conquerors, and Lysimachus obtained the north-western part of Asia Minor. He shortly afterwards married Arinoe, the sister of Polemy, king of Egypt, although his eldest son Agathocles had already married Lyanda, the half-sister of Arinoe. In n.c. 286 he obtained possession of the throne of Macedon, and obliged Pyrrhus, king of Epirus, who had laid claims to the kingdom, to retire to his native country. Lysimachus maintained his power in Asia, and was regarded as an able and successful general; he was a great favourite with the people, who deeply resented his death; and Lysimachus found himself involved in almost open war with his subjects. Lyanda, the widow of Agathocles, fled to Babylon, and treated Seleucus to make war against Lysimachus. The Syrian king was willing enough to take advantage of the troubled state of his rival's kingdom; but Lysimachus, anticipating his intentions, marched into Asia, and fell in a battle with the forces of Seleucus, in the seventy-first year of his age, according to Appian (*Syria*, 64), and in his seventy-fourth, according to Justin (xxv. 1).

The town of Lysimachia was founded by this monarch on the narrow neck which connects the Thracian Chersonese with the mainland; it was the key between Pactyia and Cardia, from which latter town most of the population were removed to the new city of Lysimachia. (Diodorus Siculus; Justin; Plutarch's *Life of Demetrius*; Pausanias, 1, c. 9, 10; Droysen, *Geschichte der Nachfolger Alexanders*.)

LYSIPPUS, one of the most celebrated statues of antiquity, was born at Sicyon. He was particularly distinguished by his statues in bronze, which are said to have been superior to all other works of a similar kind. He introduced great improvements in his art, by making the head smaller, and giving to the body more ease and natural position than was usual in the works of his predecessors. It is said that he was so admired among other things for the beautiful manner in which the hair was always executed. (Pinn., xxxv. 8.)

Lysippus is placed by Pliny in the 114th Olympiad (n.c. 324), contemporary with his brother Lyustratus, Sibens, Euphoriones, Sostratus, Ion, and Silanion. He is said to have been self-taught, and to have attained his excellence in the study of nature alone. His talents were appreciated by his contemporaries; the different cities of Greece were anxious to obtain his works; and Alexander is reported to have said, that no one should paint him but Apelles, and
no one represent him in bronze except Lysippus. (Plin. vi., 37; Cic. Ad Div., v. 12.) His reputation survived his death; many of his most celebrated works were brought to Rome, in which they were held in so much esteem, that Tiberius is said to have almost excited an insurrection by removing a statue of Lysippus, called Apoxyomenos, from the warm baths, where it had been placed by Agrippa, to his own palace.

Lysippus is said to have executed 610 statues, all of the greatest merit (Pliny, xxxiv. 7); many of which were colossal figures. Pliny, Pausanias, Strabo, and Vitruvius have preserved long lists of his works; of which the most celebrated appear to have been, various statues of Alexander executed at different periods of his life; a group of equestrian statues of those Greeks who fell at the battle of the Genius; the Sun drawn in a chariot by four horses at Rhodes; a colossal statue at Tarentum; a statue of Hercules, at Alyzia in Aenamnia, which was afterwards removed to Rome; and a statue of Opportunity ( unpopular), represented as a youth with wings on his ankles on the point of flying from the earth.

Among the numerous pupils of Lysippus, the most celebrated was Chares, who executed the colossal figure at Rhodes. (Plin. 's Historia Naturalis; Pausanias; Junius, De Pura Veterum, p. 109-118.)

LYSMATA. Rivo's name for a genus of Macrurus, Tapak Crustaceons, allied to the Shrimps.

LITHIRACE. A natural order of polypetalous Exogens, the essential character of which is to have a tubular calyx with conspicuous complete ribs, petals inserted into the orifice of the calyx, stamens springing from its base or middle, and a superior poy spernum ovary. They are most conspicuous few plants of any interest. Some of the genus Lagerstronia are handsome Indian large-flowered bushes, represented in South America by Diplododon; a few of Rhinosia have acrid leaves, which act as vesicants when applied to the skin; and the Honné dye used by the people for their nails is the juice of the fruit of Lawsonia. Lythrum Salicaria, the subject of the preceding cut, is an English type of the order.

LYTTLETON, GEORGE LORD, born in January, 1729, the eldest son of Sir Thomas Lyttelton, Bart., of Hagley, in Worcestershire, was educated at Eton, and Christchurch, Oxford, at both of which his scholastic acquirements and promising talents gained him much credit. After travelling on the Continent for some time, he entered parliament in 1730, connected himself with the leaders of the opposition to Sir Robert Walpole, and acquired eminence and weight as a parliamentary speaker. He was a favourite of Frederic, Prince of Wales, at whose court he filled the office of secretary. After Walpole's retirement, Lyttelton was made a lord of the treasury, in 1744. He was raised in 1756 to be chancellor of the exchequer, a place for which his qualifications were but limited, if the story be true that he never could comprehend the simplest rule of arithmetic. He resigned that office to Mr. Jerdan in less than a year, and went out of office altogether on the dissolution of the ministry in 1759; at which time (his father being dead) he was raised to the peerage by the title of Baron Lyttelton of Frankley. The rest of his life was chiefly devoted to literature. He died in 1772.

Lord Lyttelton's literary talents in early life won the affection of Pope. His poetry, though elegant and tasteful, does not rise above mediocrity; it has however gained for him a place in Johnson's 'Lives.' Of his prose works the chief are: 'Observations on the Conversion and Apostleship of St. Paul,' 1747, the result of those studies by which, in middle life, he was converted from scepticism into a sincere and zealous believer in Christianity. This work has enjoyed a high reputation. 'Dialogues of the Dead,' 1760, a popular and amusing work. 'History of Henry II.,' to which is prefixed an account of the Revolutions of England, from the death of Edward the Confessor to the birth of Henry II., 1764-7. This is a learned, laborious, and valuable work, the fruit of twenty years' research. Miscellaneous Works, 1774. Poetical Works, 1785. Lord Lyttelton took a leading part, by his 'Account of a Journey in Wales,' in opening the eyes of the English to the beauties of their own country; and by the tasteful and expensive improvements in his celebrated park at Hagley, in introducing the modern practice of landscape gardening.

Lord Lyttelton's private character was exemplary; his acq irements extensive; his judgment as a politician and man of the world pejorating. But his indolence prevented him from doing justice to his own powers, exposed him to imposition, and led him into some embarrassments. His son Thomas lord Lyttelton, who died early in 1779, also possessed great abilities, but wasted and debased them in a profligate and unhappy life.
M.

MAAR, the German term for certain extinct volcanic cones, especially in the Eifel, which are filled with lakes. Others not differing in origin are called see. Each term alludes to the watery appearance. Thus the Laacher See, the Maars of Duin, Ulmen, &c., are all volcanic cones, situated on eminences, but sunk so much below the level of the country as to have received the surface drainage, and to have formed a series of most remarkable lakes. They have no apparent outlet for the waters are considered by Dr. Daubeney specially to have claims to the title of 'Maar.'

MAAS. [RHIN.]

MAASLUYS (or Maaslandsluys) is a pretty considerable town of the kingdom of the Netherlands, in the province of South Holland, about 10 miles west of Rotterdam, in 51° 55' N. lat. and 4° 14' E. long. It is situated on an arm of the Maas called 'Scheur or Sluys-deip, which here empties itself into the North Sea. It has a tolerable harbour. The inhabitants, 7000 in number, are chiefly engaged in the cod and herring fisheries, the produce of which is exported in considerable quantities.

MAASTRICHT (Mastricht, or Maestricht, Trajectum ad Mosam), the capital of the Dutch part of the province of Limburg, is in 50° 38' N. lat. and 5° 42' E. long. on the banks of the Maas (or Meuse), at the junction of that river with the small stream of the Maas, into which it is divided by the Maas into two parts, which are connected by a handsome stone bridge 500 feet in length. The position of the right bank is occupied by a suburb called Willy Wyck. Maastricht is an ancient city built on a hill, and regularly, and well built. It contains some large squares, such as the extensive market-place, and the parade, which is surrounded with avenues of trees. Among the public buildings are two hospitals, the old townhall, with a public library, in the great square, and the church of St. Gervais. There are six Roman Catholic, one Lutheran, and three Calvinist churches, and twenty-one other public places. Two hospices, and two hospitals, which are supported by square pillars. In various places there are open fields in which the admission of air and light, and small water-courses, are found.

At one place, called the Fountain, there is a pretty large basin of water, into which a small stream flows, which issues from the foot of a fossil tree. In time of war, the inhabitants of the surrounding country, with their cattle, found a secure refuge in this quarry, which is said to be capable of receiving 40,000 persons. The passages, said to be 20,000 in number, intersect and cross each other in all directions, forming such an intricate labyrinth, that it is dangerous to venture into it without an expert guide.

(Beschrijving van het Kon. der Nederlanden, &c., by van N. G. van Kampen; Hassel's Handbuch; Stein, Geogr. Lexicon; Cannabich, Lehrbuch.)

MAASTRICHT. The rock of St. Peter's mountain is generally of a granular texture, and to geological observers presents a sort of middle character between chalk and particular parts of the 'calcareous gneiss' of the Paris basin. The geological relation thus suggested is confirmed by the organic remains, which, with many points of specific resemblance to the ordinary fossils of the chalk, exhibit likewise some generic relations to the Tertiary series. -

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cordingly, the scale in the place of strata now assigned by common consent to the Maastricht rocks is in immediate superposition above the chalk of England, and at some small interval below the calceareous gravel of Paris. It may be considered as an upper part of the chalk formation, which is paralleled by observed cases in the south-west of France. It is principally to Dr. Pitton (Proceedings of Geol. Soc. of London," 1829) that English geologists owe the establishment of this important classification.

But the richness of fossil material, both in fossils and in fragments of bones, is such as to offer a field to the most discriminating student. A number of important works have been published by Dr. Pitton, in which he describes a large number of fossils, and the list of works is such as to be sufficient to establish the opinion, that of St. Peter's mountain are more allied to the chalk than to the calceareous gravel—the newest of the Secondary, rather than the oldest of the tertiary.

(Dr. Pitton in Geol. Proceedings and Transactions; Meyer, Palaeologica; Von Dechen, Handbuch, &c.)

MABILION, JEAN, born in 1632, studied at the college of Rheims. He took vows in the congregation of St. Benedict, in order to desecrate the relics of St. Maur. He afterwards assisted Father D'Achery in his collection entitled "Spicilegium," and also edited the works of St. Bernard. In 1659 he published the first volume of his "Acta Sanctorum Ordinis S. Benedicti," being the first of a great number of collections that have since been published. He died at Lyons XXIV. to make a collection of books and MSS. for the royal library. On his return he published his "Museum Italianum," 1659, a kind of literary and antiquarian traveller of Italy, in which he briefly describes the towns that he visited, and more at length the churches and convents, especially those of his order, such as Monte-Casino, Vallombrosa, &c., the libraries and colleges, the rare books, and other curiosities. This work is followed by learned dissertations upon subjects of ecclesiastical history and paleography. The second volume of the "Museum Italianum" is occupied by a "Commentarius in Ordinem Romanum," or Commentary on the ritual of the various churches of Italy, in which he describes the various churches, which are there exhibited at full length. He had previously published "De Liturgia Gallicana libri tres," 1683, in which he compares the Gallican with the Mozarabic liturgy.

In the above referred to "Iter Germanicum," being a similar tour through part of Germany, namely, Suidia, Helvetia, and Bavaria, which he likewise undertook by order of Louis XIV. In this journey he visited the abbeys and libraries of St. Gall, Augsburg, &c., and among others the celebrated Benedictine convent of Tegernsee, where his companion met with a very savory reception from the librarian, a rough Bavarian, who hated them as being Frenchmen, and the more so as they caused him to be called out of the refectory to attend upon them. He also wrote an "Iter Hibernicum," a journey among the monastic houses of Ireland, in which he censures the cruelities practised in several monastic houses against those monks who transgressed the rules of their order, and speaks among others of the famous "Fide de Patre," an abbot of the monastery of St. Peter, who, in his letter to his superior, justifies himself for two monastic letters in which some persons of the name of the master under whose care he studied. It is evident however that in early life he must have been very assiduously devoted himself to the study of nature; he has acquired habits of industry. Considering that he was afterwards a most zealous adherent to the great system in dissolute and licentious habits, and especially addicted to immoderate drinking, we cannot but admire the paradoxical fidelity, and labour which appear in his works. Many writers have declared that he went early to Italy, but this is not clearly ascertained; but whatever is
may have derived from the study of the great masters and of the antique, he never attained the elegance of the Roman school.

After his return from Italy he lived for some time at Utrecht, and in the service of the illustrious Philip the Good. From Utrecht he went to Middelburg, where he painted the celebrated altarpiece, representing the Descent from the Cross, for the great church. This picture, which was of extraordinary dimensions, was highly admired by Albert Durer. The church, with this picture and all the treasures of art that it contained, was destroyed by lightning. He seems to have lived in a very extravagant manner at Middelburg, and was at last thrown into prison; but whether for debts or for some excesses is not known. It seems to have been after the reception of liberty that he went to London, where he was employed in the service of Henry VIII. He painted the king's children, and many portraits of the nobility, which gained him great reputation. Several of his pictures painted in England are still in existence, and others are owned by the Marquess of Salisbury. It is said that he was a very good state of preservation as if it had been finished only yesterday. Most of the great galleries on the Continent have specimens of his works. Among these are three in the celebrated collection formed by Messrs. Bissiere, which contains over 1,000 pictures. This chimerical genius, with his small highly-finished picture representing the Virgin Mary as Queen of Heaven. This is conjectured to be the picture which was most highly extolled during his lifetime, and which he painted while in the service of the marquisates in Italy. It is said that he took the marquess's and his son as models for the Virgin and Child. This nobleman having to entertain the emperor Charles V., put all the persons in his service into the most splendid livres, and among the rest ordered two suits of rich white brocade for his painter and two others of his household. Mabuse, under some pretence, got possession of the brocades, which he sold, and spent the proceeds at a tavern. When the great day came, and the retainers were to appear in the dress of Mabuse appeared to be of such superior whiteness and beauty, that the emperor desired to examine it, and, to his astonishment, discovered it to be paper: thus the secret came out, and greatly amused the company. It is said that Mabuse was for his part as much indignant as the emperor was pleased, but neither the place nor manner of his death is known.

Such are the particulars which we have been able to collect of the life of this artist. Three different accounts of him before now have agreed in giving the dates of 1499 and 1513. It is said that his birth and death are the same. There is however the circumstance which is absolutely irreconcilable with these dates. In the catalogue of the pictures belonging to King Charles I. is 'The children of Henry VII.; Prince Arthur, Prince Henry (afterwards Henry VIII.),' and Prince Edward, painted by Mabuse. Mr. Hope, of Hampton Court, says, 'As Prince Henry, who was born in 1492, appears to be about seven years old, the picture was painted about 1499, which fixes the time when Mabuse was in England,' but 1494 is the year in which all the accounts fix the birth of the artist. MACACO. [LEMURIDE, vol. xiii., p. 419.]

MACACUS, a barbarous word founded on the term Macaco (written by the French Macaque), which, according to Cuvier and the author of the Memoir to obtain this species for him, and Opouaux, appears for the first time in Marcgrave's Nat. Hist. of Brazil, as the native appellation of a monkey found in Congo and along the coasts of the Gulf of Guinea. The author of 'The Natural History of Monkeys,' &c. observes that its application to an Asiatic species of a genus totally distinct from that to which the animal properly belongs, belongs to one of the many similar errors of nomenclature committed by Buffon, at that time indeed unavoidable from the very limited knowledge which naturalists possessed on the subject of specific distinctions, and especially from the confusion which reigned in the geographical part of zoology.

Laërtius seems to have been the first who Latinized this term, and he was followed by other French zoologists as by those of other countries. The Quadriforo or Wanderer appears to be considered the type of the genus, at least it stands at the head of the heterogeneous species comprehended under the title.

Thus Cuvier arranges under the Macacuses the following species: Sileanus, Silenus, carborumus, raditius, cynomolgus, and Cynecebus. In the high development of the supraciliary and occipital crests; the presence of pouches and callosities, and a tail more or less long, gives its dental formula that it is common to so many of the Simiidae, viz.:

Incisors 4; Canines 1-1; Premolars 2-2; Molars 3-5.

and he arranges under it the following species: Macacu, Silenus, Silenus, carborumus, cynomolgus, and Cynecebus. Mr. Gray arranges the genus as the last of his subfamily Cercoceboidea (family Homoidea).

M. Lesson, who makes the characters of the genus consist in a facial expression, gives it the highest rank, and points out the strong development of the supraciliary and occipital crests; the presence of pouches and callosities, and a tail more or less long, gives its dental formula that it is common to so many of the Simiidae, viz.: In Cuvier, papio, and niger.

Mr. Swainson, who also adopts the genus, gives the species of the English application of the name Baboons, but he considers that they are distinguished by an elongated muzzle, as in Macacus carborumus, much more prominent than in the Cercoceboidea, and by a tail more or less lengthened. He is of opinion that they differ from the Cynecebus (Cynecebus) and Homoidea, and form a separate genus, the species of which (as M. Silenus, Silenus, and raditius) are remarkable for having crests, which either assume the form of a mane or of a radiated tuft. The Chinese Baboon Monkey has the hairs disposed in this manner, while its elongated muzzle, he observes, is so much elongated, that the facial angle does not exceed 45°, and the canine teeth are strong and large. He further remarks that it descends from the genus Macacus. This species of Baboons, and he states that the form of these animals separates them widely from the monkeys: it is, he says, strong and compact, while its disposition is cunning and mischievous. He concludes by remarking, that the crested species inhabit the eastern part of Africa.

(Nat. Hist. and Classification of Quadrupeds.)

The author of the 'Natural History of Monkeys, Lemurs, and Opossums' rejects, for substantial reasons given in that work, the genus Macacus, and applies the term Baboons, as usually understood and applied in the English language, to a group of Simiae co-ordinate with the apes and monkeys, as described by him, distinguished from the apes by the equality of their members, their cheek-pouches and ischial callosities, and from the monkeys by the short robust make of their bones and extremities, and the development of a tubercular tail, too short to execute the functions usually assigned to that organ, and the mountain rather than savannah habit which this conformation necessarily induces.

The most prominent of these traits of structure, continues the author, the abbreviated or tubercular nature of the tail, is the idea usually attached to the word baboon, and it is certainly the most prominent and characteristic attribute of the group; since, as we have frequently had occasion to observe, the comparison of the baboons to that of any other animal, if not the immediate cause, is at all events the most certain index of the habits and economy of these animals: and he makes the baboons thus defined comprise two distinct genera, Papio and Cynocephalus, respectively confined, with one or two exceptions, to the countrysides of Asia and Africa.

The author then introduces to the reader's notice the genus Papio as the last and lowest of the groups which inhabit the Asiatic continent and the great islands of the Indian Archipelago, and which appear to occupy these
regions the situation which the Cynocephali fill in Africa. Of the forms placed by the author under this genus the Wanderoo and Gelada (Papio Silenus and Papio Gelada) are the only species in which the tail acquires any length: it never reaches, he remarks, beyond the houghs, nor is it ever employed to assist the progressive motions of the animals as among the Ceroptheci. These species, therefore, he thinks cannot be separated with any kind of propriety from the Papio with tubercular tails, merely on account of their comparative length; because that organ, though rather more developed in the Wanderoo and Rheas than in the Magot and Papio niger, is still greatly abbreviated as compared with the tails of the Ceroptheci, and entirely devoid of influence as an element in the habits and economy of animal life.

The following is given by M. F. Cuvier as the dental development of the Macaques and Cynocephali, and is taken from the Chinese Bonnet Monkey (Macaque Bonnet Chinois).

Reverting to the arrangement of the author of the Natural History, &c., find the Papios divided into two small groups, distinguished by the greater or less length of the tail on the one hand, and its tubercular form or total absence on the other; of the latter the well-known Magot, or Barbary Ape, is an example, and the Wanderoo (Macaque Silenus of authors, Papio Silenus of the author of the Nat. Hist. of Monkeys), is an illustration of the former.

Description of the Wanderoo.—Hair deep black throughout, with the exception of the long beard or mane, which descends on each side of the face in the form of a ruff, extending downwards over the chest, and varying from an ash-gray to a pure white. The upper part of the face between the eyes naked and flesh-coloured; the muzzle perfectly black. Cheek-pouches large, sallow-coloured. Tail about half as long as the body, and when perfect, which in captivity is not often the case, terminating in a brush of tufted hairs. (Bennett.)

Geographical Distribution.—Peninsula of India, Ceylon! (Knox.) M. Duvauel saw the animal in the menagerie at Barracpore, and states, according to M. F. Cuvier, that the Indians give it the name of Nil bandar, or perhaps, as the author of Nat. Hist. of Monkeys observes, more properly nep or neel bandar, signifying the dark blue or blue blunder; but this, continues the last-mentioned author, evidently refers merely to the colour of the hair, and as scarcely be the real appellation of the animal, which, not being a native of Bengal, is not likely to have a Bengali name.

Habits, &c.—Father Vincent Maria gives the following quaint account of this species. 'There are found,' says the Padre, 'four sorts of monkeys on the coast of Malabar; the first is quite black with glossy hair and a white beard round the chin, measuring rather more than a palm in length. The other monkeys pay to this so profound a respect that they are humble in his presence, as though they appreciated his superiority. The princes and mighty lords hold him in much estimation for his endowments of gravity, capacity, and the appearance of wisdom above every other animal. He is readily trained to enact a variety of ceremonies and affected courtesies, which he goes through with so grave a face, and so perfectly, that it is a most wonderful thing to see them so exactly performed by an irrational creature. The general posture of the species is on all four or seated; in which positions it usually takes its food, either by the hands or by bringing the mouth to it. Its first operation in feeding is generally to fill the cheek-pouches. It sleeps either on its side or sitting, bent forward, and with the head on the breast. Those which we have seen in captivity have exhibited varied temperaments. One in particular was all life, spirit, and mischief, while another was melancholy and staid in its deportment; and yet the health of both these animals appeared to be equally good, nor was there much difference in their ages.'

MACAO, a town in China, situated at the southern extremity of the estuary of the Choo Kiang, or Canton river 22° 13' N. lat. and about 113° E. long., about 20 miles from Canton by sea. It is built on a low sandy promontory. -Hanley.
stretches southward from the island of Macao, which is separated by a narrow channel from the larger island of Kiang-shan-hien. The town extends across the central part of the peninsula from the roadstead of Macao on the east to the western harbour on the west, and is more than half a mile wide in this direction, whilst from north-east to south-west it occupies about two miles. The streets are regular, but mostly narrow. A considerable number of houses have been built by the Portuguese and other European nations in the former harbour, but the greater part are Chinese buildings. There are some churches and convents in the town, and also three small fortresses in the neighbourhood. A wall built by the Chinese across the isthmus is carefully guarded by them, and the Europeans are continually on the watch of a possible French attack. The town is much exposed to the prevalent gales during the monsoons. The interior harbour is spacious, well sheltered, and has excellent anchoring-ground; but being situated out of the roadstead, and open only to the south-west, it cannot well be used during the southern monsoon. For that reason it is rarely entered by vessels, which commonly lie in the harbour, called Tipo Cabrado, which is formed by four small rocky islands, lying south of the southern extremity of the fortresses of Macao Castle, and the English Settlement, which is not large, but as these islands are high and enclose it almost completely on all sides, it is perfectly safe, even during the heaviest gales. The entrance for vessels is from the east, but boats may pass through the northern channel, direct to Macao, without anchoring. About 30 miles north-east of Macao, farther out the estuary, is the rocky island of Lintin, on the western side of which is excellent anchor-ground, where the larger vessels lie-to before they proceed to Canton, and where an extensive smuggling trade is carried on. It is commonly supposed that the Portuguese possess the sovereignty of Macao; but that is so far from being the case, that they pay a ground-rent amounting to 500 taels per annum, and Chinese mandarins inspect periodically the Portuguese and their possessions in the town. A civil mandarin, called Tso-tang, resides within the town, as governor in the name of the emperor of China; he keeps a watchful eye on the inhabitants, and communicates information to his superiors. The only privilege which the Portuguese possess is to govern themselves; while the native population of the town are entirely under the control of the mandarins. The former, including slaves, does not exceed 3000, while the Chinese are calculated to be above 30,000. Besides the Portuguese, and the inhabitants of other nationalities reside in the town, especially Englishmen, who pass the summer months there, and go to Canton in autumn, when the vessels arrive.

The trade of Macao was formerly considerable, but it has been greatly reduced. The Portuguese are permitted to employ twenty-five vessels in this trade, but they actually do not possess much more than half that number. The most lucrative branch was the smuggling trade in opium, which has almost entirely passed to the island of Lintin. (Homesworth: The Chinese, by Davis.)

MACARTNEY, GEORGE MACARTNEY, EARL OF, was the only surviving son of George Macartney, Esq., a gentleman of Scotch descent, but whose family had been for some generations settled on their estate of Lissaneoure, near Ballycastle in Ireland, who resided in the neighbourhood of the town, but without any intention of prosecuting the profession of law. He then made the tour of Europe, and on his return home in 1764 it was arranged, through the interest of Lord Holland, with one of the members of the family, that he should be returned to the British parliament for Midhurst, under the patronage of the earl of Sandwich, then one of the secretaries of state; but this destination was changed by his appointment, 22nd August of the same year, as envoy extraordinary to the emperor of Russia, for the purpose of concluding a commercial treaty with that country. He was knighted before proceeding on this business, which, after a long and arduous negotiation, in the course of which he was not only opposed by rival interests in the court to which he was sent, but thwarted by very annoying conduct on the part of the British cabinet, he at last brought to a satisfactory conclusion. He returned to England in June, 1767, and soon after received the appointment of ambassador extraordinary and plenipotentiary to Russia, which however circumstances induced him to resign.

In February, 1768, he married Lady Jane Stuart, second daughter of the earl of Bute; and in April was returned to parliament for Cockermouth. In July following he resigned this seat in order to return to England, having been elected for Armagh in contemplation of his appointment to the office of chief secretary for Ireland, which took place on the 1st of January, 1769, on the nomination of Lord Townshend as lord-lieutenant, and the adoption of government. Whether the lord-lieutenant should be, not, as heretofore, an occasional visitor only, but a permanent resident in the country.

Macartney, who was now sworn of the Irish privy-council, greatly distinguished himself by his exertions in the debates of the House of Commons against Fio. Dr. Lucas, and the other leaders of the opposition. He held his office till June, 1772, when he was made a Knight of the Bath, and in 1774 was appointed to the sinecure of governor of Macao, which town he visited on his return from India, in October, 1774, he was returned to the British parliament as member for the Ayr burghs; but in December, 1775, he was sent abroad as governor of the island of Granada. He was raised to the Irish peerage by the title of Baron Macartney, of the town of Granada till July, 1779, when after a most gallant defence he was compelled to surrender the island at discretion to the French admiral Count d'Eaustain, and was himself sent prisoner to France. He was however very soon exchanged, and after having been consigned to a confidential mission to Ireland, was in September, 1780, again returned to the British parliament for Beeralstone.

On the 14th of December of the same year he was appointed by the East India Company governor of Madras. He arrived in India in June, 1781, when he was appointed to the post of ambassador extraordinary to Pekin, for which he was expelled, and to which he had been appointed governor-general; but the state of his health and other considerations induced him to decline that post, and it was eventually given to Lord Cornwallis. Very soon after his return home he was elected to the House of Peers, by the title of Baron Macartney, of Cockermouth, in the king's council, in 1792, when he was appointed to his most memorable public employment as ambassador extraordinary to Pekin. Having on the 28th of June been made an Irish viscount, he sailed on the 26th of September, taking with him as his secretary of embassy Mr. George Staunton, by whom the account of the embassy was afterwards given to the public. The amount of the benefit gained by this first diplomatic communication on the part of England with the court of Pekin has been matter of dispute; but it is generally agreed that no other person could have accomplished more than was done by Lord Macartney, whose conduct at least was well calculated to impress the subjects of the Celestial empire with a respect for the country which he represented. He left Pekin on the 12th of September, 1794, and landed at Portsmouth on the 5th of September of the same year, having on the 1st of March previous been made Earl Macartney in the Irish peerage.

In June, 1795, he was sent on a confidential mission to Portugal, from which he returned in July, 1796; and on the 8th of June been made a British peer by the title of baron Macartney, he was in the end of the same year appointed governor of the newly captured territory of the Cape of Good Hope. Here he remained till November, 1798, when an outbreak severely from gout, till his return to England, late in March, 1805. The manner in which Lord Macartney discharged his duty in the various public services in which he was employed procured him from all parties the employment of very considerable ability and the highest honour. An account of his public life, with a selection from his unpublish...
were employed: but so many were thrown out of work that the number was reduced to 3622 in 1832. This valuable trade of spinning raw silk flourished in consequence of the protection it received against the introduction of throwed silks from France and Italy. Some notion of the growth of the silk-trade in Macclesfield may be formed, when it is considered that every variety of silk article is now produced in this town, from the narrowest ribbon to the different kinds of capes, scarfs, and figured goods for the court of Naples, silk vestings, and velvets. It is likewise the chief place for the manufacture of silk handkerchiefs of every description, although it suffers from the competition of bandana handkerchiefs from India. This last-mentioned trade, connected with the introduction of the broad silks from the Continent, has reduced wages in Macclesfield more than one-half, and occasionally involves the silk-weavers in the greatest distress.

Macclesfield is situated on the west side and at the base of a range of high land which is on the borders of Cheshire and Derbyshire, and is a part of the mountain-region of the latter county. The Bollen, an affluent of the Mersey, runs through the town, the lower part of which is called the Whitley. A canal which extends from that part and Peak Forest canals pass close to Macclesfield, and thus opens a water communication with most parts of England.

Macclesfield contains four principal streets, diverging from the market-place in various directions; and there are four chief entrances from London, Chester, Manchester, and Buxton. The town-hall is a good building, designed by Goodwin, and decorated with great taste, and the public room is well adapted for concerts and meetings. A sub-structure was added in 1772, and contains nearly 1720 volumes, and is also a depository of the public records. The butchers’-market is a very neat, compact, and suitable range of buildings adjoining the general market. The court-house and gaol for the hundred of Macclesfield are also situated in this market-place. The town is watered in pipes from the adjoining hills, and the money paid for it goes to the borough fund. There are two fire-engines, and the town is lighted with gas. The various factories are situated on the Bollen, and the cost of the silk factories cost 30,000l, and some of the silk factories 14,000l, but the value of the latter has been much depreciated by the deterioration of the silk-trade. The common at the foot of the range of hills on the east side of the town has been enclosed in consequence which has passed for that purpose, and 1791; it is now partly built upon, and the rest highly cultivated. There is an excellent steam-mill for grinding corn in this part of the town. There are two banking establishment, and a branch from the Imperial Bank of Manchester, and Buxton’s branch are open on Tuesday and Saturday. The fairs for cattle, cloth, toys, &c., are, May 6th, June 22nd, July 11th, October 4th, and November 11.

The dispensary, erected in 1814, has one physician, three honorary surgeons, and one house-surgeon, with a salary of 100l per annum. There is one savings’-bank, eight benevolent societies for males, each consisting of 400 or 500 members, and four for females, of about 300 to 400 members each. There are many trust funds for charitable purposes. The free grammar-school was endowed with lands in 1392 by Sir John Percival, sometime lord-mayor of London, who is said to have been born in this city. It afterwards fell into the hands of the crown, and in April 16th, 6th of king Edward VI, the freedom was taken place, and the annual revenue now amounts to 1360l per annum. By act of the 13th and 14th (1838) four exhibitions of 50l each for Oxford and Cambridge are established, and a commercial school is connected with the grammar-school. The first was founded by Eleanor, queen of Edward I, in 1278. Its architecture is partly Gothic; the chancel end, which has been rebuilt, contains a painted window representing our Saviour, the four Evangelists, and Moses delivering the Ten Commandments. There are two chapels adjoining this church; one belonged to Thomas Savage, archbishop of York, whose heart was buried here in 1508: this chapel now belongs to the marquis of Cholmondeley. The other chapel belongs to the Legh family of Lyme, one of whose ancestors, as appears from a brass plate in it, served king Edward III. and his son the Black Prince, during all their wars in France, and the estate of Lyme was given him for recovering a standard at the battle of Cressy. He afterwards served Richard II., and was succeeded at Chester, Shrewsbury, the Wrekin, and Henry V, was slain at the battle of Agincourt.

Christ Church was built by Charles Roe, Esq., who acquired a fortune in the silk trade, and was among the first to establish it. The two churches of St. Michael and St. Peter were founded by the 13th century; the Wesleyan's church, St. John’s, Trinity Church, Hurdsfield, have 1300 seats. There are various meeting-houses belonging to the different classes of Dissenters.

A mechanic’s institution was formed a few years ago by the principal manufacturers of this town, with the view of encouraging the efforts of some of church and Dissenters. There have already been associated for scientific purposes. Various branches of the arts and sciences are now taught to 154 members, and the musical class has made such progress as has been the occasion with a concert, which composed of four persons. When the Factory Commissioners first visited Macclesfield, a census was taken by the manufacturers of the state of education of the children in their employment, and it was found that 96 per cent. could read: the maids in this work were accounted for by the circumstance of their belonging to families newly arrived from the country, and their wanting such dress as they thought necessary for appearing at school.

The following was the state of education as ascertained in June 1840, by a Mr. Basset, of the London Metropolitan Schools College, and the schoolmasters of the town contained 2100 scholars. Of this number of pupils 1115 also attend Sunday-schools; 1003 frequent only day-schools: 695 are under five years of age, 1586 between five and fifteen, and 54 above fifteen years old. The monitory syllabus is in 22 volumes nearly nearly, of which 6 are new, and many of these are attended by 1219 scholars. The number of Sunday-schools amounts to 7842. Of these 149 are under five years of age, 5716 between five and fifteen, and 1977 are above fifteen. The Established Church has two Sunday-schools and 266 scholars; the dissenters 2129, the Wesleyan Methodists three schools and 1175 scholars, Primitive Methodists 583, New Connexion 1248, Independents 971, Baptists 296, and Friends 394. The average attendance of children on earth is 2750.

(Corry’s History of Macclesfield; Ormerod’s History of Cheshire; Aikin’s Manchester; Report on the Silk Trade, 1832; Charity Commissioners’ Report on the Growth of the Population Returns; Communications from Macclesfield.)

MACÉ, originally a club of metal, whence it derived its name of Macé or Macé, and whence its diminutive Macaule is also derived. In a more ornamental form it is the insignia of authority borne before magistrates.

The mace of a military was appropriated to the cavalry, and in the Bayeaux tapestry men are represented in the hands of the combatants. It is not clear when the fashion of suspending them from the saddle for military use was first introduced into Europe. It seems to have been borrowed by the Normans, and it may perhaps assign it to the middle of the thirteenth century. Muratori observes that in a close conflict of cavalry it was exceedingly difficult to overthrow or wound powerful men in armour sitting on horseback, for their person was enclosed in hauberks, helms, and other clothing, which prevented the power of swords, darts, arrows, and such light weapons. For this reason it was usual to strike men defended with iron maces, or to turn the attack on the mace by the knight. The use of iron maces by the knight was to keep the rider; or if he had tumbled on the ground, the weight of his armure might render him unable to contend with an effect.

Maces seem to have been much used from the time of Edward II., both in battles of state and in tournaments; and the whole heavy cavalry were supplied with them in the fifteenth and sixteenth centuries, though they sometimes gave way to the short battle-axe and horseman’s hammer. The invention of pistols in the reign of Henry VIII. occasioned the disuse of maces in the tournament.

Ellis, in his notes to the ‘Fabliaux,’ says the mace was a common weapon with ecclesiastics, who, in consequence of their tenures, frequently took the field, but were by a curse of the church forbidden to wield the sword. Maces were used by the Turkish horsemen. (Munro, Antq. Man.)
The origin and early history of the Macedonians are involved in much obscurity. Some moderns have attempted, against all probability, to derive the name from the Kittim (Δυσινον or Περσεινον) mentioned in the Old Testament, (Gen. x. 4; Num. xxiv. 24; Jer. ii. 10; Ezek. xxvii. 6; xi. 30). This opinion appears to have arisen in part from the description of the Kittimites in the Kithinia, which is supposed to answer to Macedonia; but still more from the fact that in the book of Maccabees, Alexander the Great is said to come from the land of Chettisme (την Ρηγονωσιαν την Στεφαναν), and Perses is called king of the Kittimians (Keristani, 1 Macc. viii. 24).

In inquiring into the early history of the Macedonians, two questions, which are frequently confused, ought to be kept distinct, namely, the origin of the Macedonian people, and the origin of the Macedonian monarchy under the Temenidai; for while there is abundant reason for believing that the Macedonian princes were descended from an Hellenic race, it appears probable that the Macedonians themselves were an Illyrian people, though the country must have been inhabited by various times by many Hellenic tribes. The Greeks themselves always regarded the Macedonians as barbarians, that is, as a people not of Hellenic origin; and the similarity of the manners and customs, as well as the languages, as far as they are known, of the early Macedonians and Illyrians, appears to indicate a common identity of the two nations. In the time of Herodotus, the name of Macedonia comprehended only the country to the south and west of the Lydias, for he observes that Macedon was separated from the Boeotian by the united mouth of the Lydias and Haialemus (Heraclides); but in Herodotus' time, it is probable that Herodotus conceived that Macedonia extended not appear from his narrative. According to many ancient writers, Macedonia was originally called Emathia (Plin. H. N. iv. 17; Justin, vii. 7; Geor. xiv. 6); but it is usually regarded as the founder of this empire; the dominions of which were first confined to the country in the neighbourhood of Edessa between the Lydias and the Haliacmon, but afterwards extended as far as the Haialemus, and from the coast as far as the Strymon. Very little however is known of the history of the country till the reign of Amyntas I., who was king of Macedonia at the time of the expulsion of the Pisistratids from Athens, a.c. 560. This monarch submitted to Megabyzus, who had been left in Europe by Darius after the failure of his Scythian expedition; and Macedonia was considered a province of the Persian empire till the battle of Platæa delivered it from subjection to the king of Persia.

Amyntas was succeeded by his son Alexander I., who was obliged to accompany the Persian army into Greece, but was able on several occasions to render important services to the Greek cause. Alexander was not allowed to contend at the Olympian games until he had proved his Argive descent. (Cic. Flor. v. 22; on the Lycidas, and the Lydias, the Dioscorides, in the usual course of its course at least. The only other rivers of importance are the Strymon and the Angius, whose streams were separated from that of the Axios by a range of mountains which runs from Orbos to the north towards the peninsula of Chalideae. The Strymon (Struma) rises in Mount Scopus and flows into the Strymonic Gulf (Gulf of the Haliacmon, or Orphanos), into which the Angites flows from the northward. [Ampipolis.]

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literature and refinement. He is said to have invited Socones to settle at his court, and Euripides resided there during the latter period of his life. [ARCHIMEAS.]

On the assassination of Archelaus, B.C. 399, the greatest confusion prevailed for many years; and it was not till the accession of Amyntas II. (B.C. 386) that anything like 369) the same state of confusion prevailed that had followed the death of Archelaus. Amyntas was succeeded by his eldest son, who was assassinated at the end of the first year of his reign by Ptolemy Alcidas, who held the supreme power for three years as regent during the minority of Perdiccas; but, in consequence of abusing his trust, he was deposed and executed by the son of Philip, who was restored to the country and called *MAC the son, of Cassander was crowned king of Macedonia, after five years. In battle against the Illyrians, B.C. 359, and was succeeded by his younger brother, the celebrated Philip, who succeeded to a kingdom assailed by numerous enemies and weakened by intestine commotions, and who was the first power to the title of king of Macedon. Cassander was succeeded by his son Philip, B.C. 296, who reigned only two years; and on his death, in B.C. 294, his two younger brothers, Antipater and Cassander obtained the throne. The throne was seized by Demetrius, the son of Antigonus, who reigned for seven years. He was driven from his kingdom, B.C. 257, by Pyrrhus, king of Epirus, who was however dissolved in his turn, after a short reign of seven months, B.C. 249. *Mac, king of Macedon.

On the death of Lysimachus, who fell in battle, B.C. 281, the country remained almost in a state of anarchy for many years. The invasion of the Gauls from B.C. 260 to B.C. 275, and the contest between the ancient pretenders for the throne, brought the country to the brink of ruin. Eventually Antigonus (surnamed Gonnatas), the son of Demetrius, was proclaimed king; but was dethroned by Pyrrhus, who obtained the kingdom on his return from Italy. After the death of Pyrrhus, Antigonus regained possession of the throne, which he retained till his death, B.C. 239. The two following monarchs, Demetrius II. (B.C. 239-229) and Antigonus II. (B.C. 229-220), were principally occupied in the Grecian wars which followed the formation of the ALEXANDER.

Philip V., who succeeded Amyntas, alarmed at the increasing power of the Romans, entered into an alliance with Hannibal; but was unable to afford him any effectual assistance, in consequence of continual wars with the *BIOLOGIST. He was one of the most able men of his time, and was distinguished for his sagacity, which rendered him an exict against him. On the conclusion of the war with Carthage, Philip found that he was unable to cope with the Roman power; and after continuing the contest for a few years, was obliged to sue for peace on such terms as the victors dictated. Philip was succeeded by Perseus, B.C. 178, who carried on war against the Romans, and was finally conquered, B.C. 166. [EMILII.] Macedonia was not immediately converted into a Roman province, but was divided into four districts, which were considered independent of each other, and of which the capitals were—Ampipolis, Thessalonica, Pella, and Pergamum. Macedonia was reduced to the form of a Roman province, B.C. 142.

It is very difficult to determine the boundaries of the Roman province of Macedonia. According to the *Epiceni of Strabo (vii.), it was bounded by the Adriatic on the west; on the north by the mountains of Scardus, Orbeles, Rhodope, and Hemus; on the south by the Via Egnatia; and it extended as far as Cypsela and the mouth of the Hebrus. But this description was cast before the southern boundary of Macedonia cannot be correct, since we know that the province of Macedonia was bounded on the south by that of Achaea; and although it is extremely difficult, if not impossible, to fix the boundaries of these provinces, yet it does not appear that Achaea extended farther north than the south of Thessaly.

Macedonia was inhabited from the earliest times by numerous tribes, whose names continued to be given till a late period to various districts of the country. The most important of these divisions were—Macedonia, Botticia, Pheria, Elimea, Styrmia, Orestis, Lycus, Eordia or Orseau, Emathia, Pernia, and Chalkeis. Mydonia, on the Thermaic Bay, was separated from the district of Epiros by the isthmus of Dion (Herodot., vii. 123); but its boundaries on the east are described as useful. Thyedidas makes it extend as far as the Styrmus (ii. 99); but this is at variance with the statement of Herodotus, who speaks of the land to the west of the Styrmus as Epiros, and of its being named Epiros, after its great king, Epiros, and of its being named (Herodot., vii. 123, Excerpta, sec. 10, vol. ii., p. 131.) It was a large and prosperous town, and exists at the present day under the name of Saloniki. The Apostle Paul addressed two epistles to the Christian converts in this town. The lake Balaea, which lies between Mydonia (Thyed., i. 68); it is said by Dr. Clarke to be about twelve miles in length, and six or eight in breadth. The Botticia, or Bottica of Herodotus, was bounded on the coast by the Axios, on the west by the united mouths of the Axios and Ister, and on the north by the kingdom of Emathia.* The principal town in this district was Thessamenes, afterwards called Thessalonica by Cassander in B.C. 317, and named after his wife, Thessalonica, after 399, and after the days of the city, was called Thessalonica. The Thessalonicans to the south of Pellion, at the foot Mount Berinnus (Pin., H. N., iv. 17), was the antient of Berinna, or Berea, which is mentioned in the Acts of Apostles (xvii. 10).

Proceeding along the coast we come to Perea, the antient district of Macedonia originally intervened between Botticia and Pheria. According to Strabo (vii. sec. 6, vol. ii., p. 130), and Livy (xli. 9), Pheria was bounded on the south by Diun; but in more antient times the name was applied to the country between the Axios and the Pelion. The name of Pheria calls the country between the mouth of the Leda and that of the Penus by the name of Pheria. Pheria is celebrated in Grecian mythology as the first seat of the heroes. Pindus, the chief place in this district, also called Pindus, and named from Pindus (Pind. H. N., iv. 17), and from Pindus (Pind. H. N., iv. 17), and from Pindus (Pin., H. N., iv. 17). Forty stadia to the north of Pheria was the town of Methone (Strabo, vii. sec. 6, vol. ii., p. 130), at the same time which Philip, the father of Alexander the Great, lost ane.

In the interior, to the west of Pheria, in the valley of Halaecon, was the district of Elimea, the inhobiting Egegius, and of Egeus, who was the son of Egeus, and was subject to the Macedonian monarchy, was attacked near Pydna, and after the battle of Pydna, in the district of Orestis, in Illyria and Epirus. Nothing is known with respect to the district of Orestis (Ptolemy, xvi. 30; Liv., xxxiii. 34), which probably existed as well as Müller has remarked, from the mountains that form the country (spec. mountaun), and not from Orestis, the name of Ashmunein. The Orestis appear to have been inhabitants of the Macedonian king; for a considerable time before the rise of Bottion, as well as of Orestis, and the Pelasgian and the Pelasgian of the Bottion. (Journal of Travellers', p. 14.)
The peninsula of Acte, or Athos, was inhabited in the time of Thucydides by a few people of Chalcidian origin, but principally by Pelasgians, Balsiti, Cretonians, and Eceni, who dwelt in small fortified villages. (Thucyd., iv. 109.) At the extremity of this peninsula was Mount Arinos, called at the present day Monte Santo. The canal of Xerxes can still distinctly be traced in the small isthmus which connects the peninsula of Acte with the mainland, which was once an important town. (Thucyd., iv. 124.)

The chief towns in the interior of the peninsula of Chalcide were Chalcis and Apollonia, mentioned in the Acts of the Apostles (xvii. 1).

The Via Egnatia, which formed one great line of communication between the Ionian Sea and Byzantium, was commenced at Apollonia in Illyria, and was joined at Clodiana on the Genusus by the Via Candavia, from Dyrachium, which however is also called the Via Egnatia (Strabo, vii. 20).

The Via Egnatia entered Macedonia in the district of the Palai, and passed through Edessa, Pella, Thasus, Salonica, Apollonia, and Amphipolis, where it entered Thrace. [Thrace.]

MACERATA E CAMERINO, DELEGAZIONE DI, a province of the Papal State, forming part of the old division of the Marches. It was named after the river Macerata, founded by Ancona and Urbino e Pesaro, on the coast by the Adriatic, on the west by the province of Perugia, and on the south by those of Spoleto and Fermo ed Ascoli. Its population at the last census amounted to 20,000 inhabitants, and consists of walled towns, 48 theatre with communal councils, and 235 villages and hamlets. The northern part of Macedonia was inhabited by various tribes of Paeonians: of which the principal were the Pelaonians, who dwelt north of Lycostea. The chief town of this district was also called Pelaonia. The Agrians, north-west of the Pelaonians, were a powerful Paeonian tribe, living near the sources of the Strymon (Strabo, vii. 18, vol. ii. p. 133.).

The peninsula of the Chalcides, together with the three smaller peninsulas, contained several important towns, which are mentioned by Strabo and other ancient writers. The largest of these towns was Mysrra, which was situated at the easternmost point of the peninsula, and was the capital of the whole confederacy, of which it was the centre. It was inhabited by the Athenians, who had a colony in the town, and were entitled to trade with the island, and to contribute to its defence. It was governed by a council of four hundred men, and was subject to the Athenians. Potidaea, which was afterwards called Cassandria from Cassander, king of Macedon, founded by the Corinthians (Thucyd., i. 36), stood on the narrow isthmus which connects the peninsula of Athos with the mainland. It was an important town, and was taken by the Athenians in the Persian wars. (Thucyd., iv. 109.)

The peninsula of Macerata, a hill in a fine country watered by the Chienti, a well-built, comfortable town, with a number of beautiful villas, and a fine theatre. It has been a colony of the Athenians, and is now a bishop's see, with 7000 inhabitants, several churches and convents, and some silk manufactories. It is the birth-place of the painter Carlo Maratti. 6. Fabiano, farther north, a bishop's see, with 7000 inhabitants, manufactories of paper and parchment, and a considerable trade in wool.
parts of a substance, when digestion would not merely dissolve but dissipate them.

MACHAIRODUS, a genus of extinct animals established by Professor Kaup upon those canine teeth with serrated or dentilized edges which have been attributed to bears (Ursus cultridens, &c.) by Cuvier and others, and to great cats (Felis) by Bravard. Dr. Buckland (Bridgeover Treatise), in his catalogue of the animal remains found in strata of sand, referrible to the second period of the tertiary formations (Miocene of Lyell), at Epplesheim near Altezey, about twelve leagues to the south of Mayence, and recorded by Kaup, includes Machairodus, which Dr. Buckland places between Felis and Iulo, and notes as "allied to bear, Ursus cultridens." Professor Kaup however remarks, that these "canine teeth" and even the dentilations on their edges have a complete resemblance to those of Megalosaurus, and indeed their flatness and thinness do not correspond with the canine teeth of any of the existing Carnivora, while the dentilations strongly resemble those of the Saurian above mentioned. We here figure a tooth of Megalosaurus, a tooth of Machairodus (Urus cultridens) and a cast of another, from specimens in the museum of the Geological Society of London.

without existing ruminants with very long canine teeth in the upper jaw with serrations on their edges, though not so broad in proportion as those of Machairodus. [Bisal, iv., p. 95.]

MACHETES, Cuvier's name for the Ruff (praenaus Linn.). [Scolopax.] MACHAIRODUS, NICOLAI, was born at Florence in 1469, of an old though not wealthy family of that republic. Having received a liberal education, he was employed in the office of Marcoz Adriani, chancellor of the community of Florence, and afterwards, when twenty-nine years of age, he was made a member of the Ten, a house ever since known to the management of foreign affairs and diplomatic negotiations. Machairolus's abilities and penetration being soon perceived by his superiors, he was successively employed on many and very important missions. The first was in 1478, to Jacopo Appiano, lord of Fiume, for the purpose of engaging him to join the Florentine troops which were besieging Pisa, whilst their general Vitelli was defending the Florentine territory against the Venetians, who joined the emigrant partizans of the Medici by munitions from the borders of Romagna. In the following year, 1479, Machairolus was sent to Catherine Sforza, countess of Fgoli, in order to make arrangements with her son Ottavano to engage as a condottiero in the service of the republic. The permission given by the Ten to Machairolus for the use of his missions, and his letters or reports to them written during the course of his negotiations, have been published, at least in great part, and they occupy volumes iv. and v. of the 4to edition of his works (Florence, 1785). They are most curious and valuable documents for the history of times, and they are also most useful for the understanding of Machairolus's political and historical works which he wrote later in life. Many letters however, and some of great importance, written to or by Machairolus, remain still unedited. There is a collection of them in manuscript in the library at Paris; three more volumes of autographs were purchased in 1826, at Florence, by Lord Guilford; and another part remains at Florence in the libraries Pitti, Rinuccini, and others. (Valdery, Voyages en Italie: Avenel, three volumes on the French translation of the works of Machairolus; Périss, which appeared in vols. 41 and 42 of the Revue cyclodique.) In the year 1500 Machairolus was sent as a commissary to the Florentine camp before Pisa. He was present at the arrival of a body of French and Swiss auxiliary troops under De Beaumont, sent by Louis XII., who had just recovered Lombardy and had formed an alliance with Florence. Dissensions however arose between the allies concerning the payment of the auxiliaries. The Swiss mutinyed under degli Albizzi, one of the Florentine commissioners; and French abandoned the attack against Pisa, throwing all the blame upon the Florentines, and took possession of Pisa, of Massa and Carrara, and other districts belonging either to the state or its allies. The situation of Florence, which saw itself entirely at the mercy of France, while it was threatened on the other side by Cesare Borgia, then the terror of central Italy, who, supported by his father Pope Alexander VI., and also by the French, was making himself master of Romagna by force, treachery, and threatening Florence, where he wished to re-establish the Medici. [Borgia, Cesar.] In July, 1520, Machairolus was despatched to France in order to explain to Louis XII. the untoward occurrence of the French king to persuade him to keep the king, or rather his all-powerful representative Cardinal d'Ambroise, archbishop of Rouen, in a friendly position towards Florence, and thus screen the republic from the ambition of Borgia. This was a very delicate mission. For though the minister were previous to Machairolus in the service of the Florentines; they had an interest in favouring the Borgias; and they were also instigated against Florence by Trivulzio, Beaumont, and other persons of influence at the French court. Machairolus's mission to France lasted till January, 1521. This jealousy of the French king has proved useful. The intelligence of the republic after the death of the vigorous and unprincipled Borgia entered the camp with 8000 men, and encamped a few miles from Florence. The citizens showed firmness, and in the meantime
letters came from the French king forbidding Borgia from molesting the republic. A convention was concluded in May, 1501, between Florence and Borgia, by which the latter, after receiving a sum of money, went his way to Florence, and dissolved the insurrection territory after committing many depredations. But in a few days which it was his purpose to return to Rome, the dispute arose between Borgia and the Florentines, by which the latter, after receiving a sum of money, went his way to Florence, and dissolved the insurrection territory after committing many depredations. But in a few days which it was his purpose to return to Rome, the dispute arose between Borgia and the Florentines, by which the latter, after receiving a sum of money, went his way to Florence, and dissolved the insurrection territory after committing many depredations. 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In July, 1510, Machiavelli was sent to France a third time. The Cardinal d’Amboise was late dead. The object of this mission was to encourage the French court to maintain the alliance with the pope, and the emperor against the Venetians (the league of Cambrai), and to induce Louis to prevent the Swiss from enlisting in great numbers in the service of the pope, for fear that Julius, feeling himself independent, should take some new whim into his head. But Louis reneged the project, and threw in his hand; while Machiavelli was in France, Julius formed a league to drive the French out of Italy. The letters of this mission are very important. The audiences of Louis to Machiavelli, and the conferences of the latter with the cardinal of Paris, the chief of France, and others of influence, afford some conception of the projects of Louis, on the proposal made by the emperor Maximilian to Louis, of dividing Italy between them, which Louis refused to accede to, are extremely interesting. Machiavelli returned to Florence in September, 1510, having consolidated the alliance of Florence with Venice.

On his return he wrote his second ‘Decennale,’ or short chronicle, in terza rima. The first ‘Decennale’ went as far as 1504, after the fall of the Borgias. It thus alludes satirically to the death of the Medici family, with the words: ‘Mal di Valenza; e pres se riposo Portato fit fra l’ani me beato, Lo spirto d’Agostino gion. Del qual secondo le sauc pe pedale, Le si fininiali o rare aecile, E in cinque versi il simbolo.’

The second ‘Decennale’ comes down only to the year 1510, but Machiavelli intended to complete it till 1514. In September, 1511, he was sent again to France, concerning the council which assembled at Pau, by order of Louis XIII., to decide the fate of Julius, who had been killed, but which, however broke up without effecting anything. Machiavelli fell ill, and soon returned home. In 1512 the battle of Ravenna was fought, Gaston de Foix was killed, and the French lost Italy. Julius, who was irate against Florence for having sided with the French, engaged the Spanish viceroy of Naples to send a body of troops against it, and re-establish the Medici by force. The catastrophe took place soon after.

In September, 1512, when Giuliano and Giovanni de’ Medici, the sons of Lorenzo, returned to Florence by means of the Spanish infantry, and overthrew the popular government, the gonfalonier Soderini made his escape, and the secretary Machiavelli, with others of the popular party, was dismissed from office, and banished for a time from the city. In the following year a conspiracy was discovered against the Medici, in which Machiavelli was accused of having participated; being arrested in February, 1513, he was put to the torture, which was the usual means then employed under all the governments of Florence and Italy, of extracting confessions from criminals. He however maintained that he had nothing to confess. From his prison of Le Stinche he wrote a sonnet to Giuliano de’ Medici, who was then governor of Florence, his brother Giovanni having gone to the concave at Rome, where he was imprisoned. The sonnet, which is half sad, half humorous, describing his suffering, his own torture, the annoyance of hearing the screams of the other prisoners, and the threats he had of being hanged, is given by Ascoli in his biography, entitled ‘Machiavel, son Gène et ses Erreurs, 2 vols. 8vo., Paris, 1833.’

He was soon after released, in consequence of a pardon sent from Rome by Leo X. to all those concerned in the conspiracy, and whatever感触they had. Even then, Pietro Boscali and Agostino Capponi, had been executed.

Machiavelli now withdrew for several years from public life, and retired to his country-house at San Casciano, about eleven miles from Florence, 4th of October, 1513. For the 7th of October he wrote his discourses upon Livy, his books on the art of war, and his ‘Principe.’ The last work has been the subject of much controversy, which is now at an end. The book ‘Del Principe,’ or ‘De Principatibus,’ for that was the original title, was not intended for publication; it was written by the author for the private perusal first of Giuliano, and then of Lorenzo de’ Medici, afterwards duke of Urbino, son of Piero and grandson of Lorenzo the Magnificent, who was appointed by Leo X. governor of Florence, his uncle Giuliano having returned to Rome. Machiavelli, in a letter discovered only in 1510, and addressed to his friend Vetorni, then at Rome, 10th December, 1513, after humorously describing his mode of life in the country, mentions this treatise on which he was then engaged, ‘And the principe, or the art of government, I must confess I had not spent the 15 years in which I have studied the art of government in sleeping or playing, so that they might think of employing a man who had acquired experience at the expense of others,’ and he adds, ‘If I wish that all those who have been employed in writing or rolling a stone. They ought not to doubt my fidelity. My poverty is a testimony of it.’ These expressions show clearly enough that Machiavelli’s object in writing ‘Il Principe’ was to recommend himself to the Medici. All the more so, as he was a private person, and the Medici, who render absolute princes odious to the people, or to induce the Medici, by following his precepts, to render themselves insupportable and thus bring about their own fall and the restoration of the republic, are completely overthrown. In this treatise Machiavelli saw the Medici, who were too firmly seated at Florence to be dislodged, and although he was himself partial to a rational system of civil liberty, if consistent with a strong government, he was still more attached to the national honour and independence of limit, that he could not but exult at the rise of some rash babblings of party spirit, foreigners might be enabled to interfere and enslave Florence, as they had enslaved Lombardy and Naples. At the end of his ‘Principe’ (ch. xxv) he displays this feeling with great energy. After enumerating the advantages and the dangers of international relations with other nations, Spanish, French, Swiss, and German, who by turns invaded Italy, he says that it was still possible to form a native Italian army, on a new system of discipline and tactics, which might unite the advantages of each, and render all other methods of forming armies a comparative matter of detail. He has a strong and pleasant passage on the credit due to a new prince, who would be looked upon as the liberator of Italy, especially by those provinces which have suffered most from foreign irruptions, and which would hold him with tears of joy and gratitude; and he asks, ‘Who could close against him? What people of Italy could deny him obedience? Every one is sick of this barbarous domination. (Ad ognuno puizza questo barbaro dominio.) Let your illustrious house undertake this mission with the spirit and bce- phe, friends, and tell him that he would be exalted to the highest in the land, for in the eyes of all nations, not only those who usurp the government of their own country, but the consuls Oliverotto, the petty tyrant of Fermo, who after one year of usurped power fell by the arts of a greater and more able tyrant, Cesare Borgia. The 9th chapter treats of those nations and princes who, while they have not but with the consent of their countrymen, have risen to the supreme power. Chapter 10 treats of the strength of the various principalities. Chapter 11 concerns ecclesiastics. Chapter 12, 13, and 14, treat of the military force and the nature, showing the danger of relying upon the first two species of troops. Chapter 15 treats of the things which bring to princes praise or blame. Chapter 16, of liberty and patri- fiety, and of the disorders which exist in every nation. Chapter 17, of cruelty and clemency, and whether it is better to be loved than feared. Chapter 18 says that the prince should be feared without being hated, and with this new be ought to abstain from touching the women and the property of his subjects, and repeat it, even in cases of punishment for treason, he ought to respect the succession; because men sooner forget the death of their fathers than the loss of their patrimony. The 18th chapter, which has been considered as the most ominous, is in answer to the question, ‘In what manner ought a prince to keep his faith?’ Machiavelli begins by observing that any man knows how laudable it is for a prince to keep his faith, and to
Regimiento and Golden Legazioni,' fragments its Lingua Philosofucal held no supports his stUc, barians. Chapter printed Italian Wenzo wrote in Rome. Who by cross the multitudes and held in his Machicolation. Ares Machiavelli's works are those of Florence, 1763, 6 vols. Ares and Macchiavelli, as professor of astronomy to Gresham College, 16th May, 1713. His death is announced in the 'Gentleman's Magazine,' 7th June, 1751, but the date of his birth is unknown. He is the author of a method for determining the quadrature of the circle, by means of the known development of an arc according to the ascending powers of its tangent, which is so modified as to render rapidly convergent. It was how ever by means of Dr. Halley's method that he computed the positions of comets far out in space, as far as one hundred places of decimals. In the 'Philosophical Transactions' he wrote: 1. A paper 'On the Curve of quickest Descent,' xxx., 1718; 2. 'A Case of disstemer Skin,' xxxvii., 1732; 3. 'Solution of Kepler's Problem,' xi., 1725; 4. 'On the Laws of the Moon's Motion according to Gravity,' which was printed at the end of Motto's Translation of Newton's 'Principia,' 8vo., 1729.

MACHINE, an object by the intervention of which a motive power is made to act upon any body and overcome the force by which the latter resists the effort to change its state of rest or motion. A machine differs in no respect from a tool, an instrument, or an engine, and any one of these terms may be used to describe it. The word machine is however generally applied to an object containing in its construction some mechanical power, and which, when in use, is held in the hand of the operator.

The advantage which any machine affords for overcoming resistance, consists in the reaction by which it supports a certain portion of the weight producing that resistance, so that the motive power has only to counteract the remainder. This may be observed in the simplest machines, as well as in the mechanical powers. For example; in the lever, the wheel and axle, and the pulley, whose properties depend on the theory of parallel forces; (when, consequently, of the resistance, the moving power, and the reaction of the machine, some equivalent to the support of any other working portion of the resistance may be made to rest on the point of support, or the point of suspension.

The works of Machiavelli, not mentioned above, are: 'Storie Fiorentine,' which he presented to Clement V in 1352; to the Pope, in 1355; at Rome, 1377; at Florence, 1381; and at Venice, 1427. They rank among the best works on Italian history. The style of Machiavelli is remarkably nervous, concise, and comprehensive, and very different from that of his contemporary (but it may be said, continuator) Guicciardini. Machiavelli has left fragments which bring down the history of Florence to 1499. 2. 'La Mandragora,' and 'La Città,' two comedies; 3. 'L'Asino d'Oro,' an imitation of the 'Golden Ass' of Apuleius; 4. 'Vita di Cencio dei Medici'; 5. 'Di Machiavelli, Gino di Luca,' which is a political and statistical account of that republic; 6. 'Sette libri dell'A rte della Guerra,' which were highly esteemed by Frederick the Great of Prussia and other competent judges; 7. 'Discorso di Pietro dei Medici, della Lingua Italiana, Toscana, o Fiorentina,' besides minor pro-
In the inclined plane, the wedge, and the screw, whose properties depend on the theory of forces concuring in a point, the motive power, the resistance, and the reaction of the support, are represented by the three sides of a triangle; and the ratio of the first to either of the others may be varied at pleasure by the construction of the machine, to any object, are produced by the muscular strength of men or animals; the actions of weights, springs, wind, water, steam, or fired gunpowder; and these powers may generate the same effects, with equal degrees of resistance, by the same means. Even that power which is produced by a sudden impulse, as when a rammer descending by its weight falls on the head of a pile, is only a pressure existing during an indefinitely short interval of time. The point in any motion, at which the resisting force of the moving power is applied is called the impelled, and that against which the resistance acts is called the working point.

In the employment of any machine a certain portion of the power is expended in overcoming the inertia and friccion of the moving parts of the machine; while on the other hand, the working power is applied to the impelled, and that against which the resistance acts is called the working point.

In machines it is evident that all abrupt variations of velocity should be prevented, on account of the irregularity which they induce in the action. When, for example, one wheel drives another by means of the teeth on their circumference, the pressure of the teeth takes place in an oblique line of action; and the movement may be steady if the teeth are well formed; but on a sudden diminution of the velocity of the driving wheel, that which is driven, continuing for a time to move with its actual velocity, tends further to retard the movement of the other, and the pressure of the teeth at an angle and on the opposite side. Thus a shaking motion is produced which diminishes the efficacy of the machine. The disadvantage attending such variations in the movement of the machinery renders it advisable to gain the required effect by continued pressures, and not sudden shocks, rather than by the employment of percussive forces.

It is also a maxim assented to by engineers that the impelled point of a machine should not be allowed to move with a greater velocity than that with which the motive power acts upon it; since in this case the excess of velocity in the machine will be employed in accelerating the motion of the power, and thus the general acceleration of the machine will suffer a corresponding diminution. The velocity of the impelled and working points should, therefore, be properly adjusted to the pressures, the inertia, and the friction, in order that all possible advantage may be derived from the machine.

A just estimate of the power of a machine ought to involve a notion of the momentary accelerations and retardations of motion to which it is subject, and all the losses arising from inertia and friction; but as the introduction of these circumstances would excessively complicate the investigation, it is usual to make the measure of the present power of the machine consist in the sum of all the retarding points shall be in a state of uniform motion. For then, agreeably to the property of the simple lever, the velocities of those extreme points will be inversely proportional to the forces which would be in equilibrium at the same points; and the rule of the impelled and working points should therefore be in a state of uniform motion. The fact is sufficiently evident when a mass of any material is to be conveyed from one place to another, or when a body is let fall on any object with a given height. It follows that, if an algebraic expression be obtained for the momentum of the machine in terms involving that resistance, the motive power and the distances of their points of application from the axis of motion; on making the differential of that expression equal to zero, the value of the power which the machine will impart upon the axle of the machine is found from the resulting equation.

If M represents the mass of any body moved, W its weight, which is equal to Mg, g (=32 feet) expressing the force of gravity, and v its velocity, which was raised in one second of time, and V the velocity which a body would acquire by falling vertically through a height equal to H, we shall have, by the theory of moments, V = 2gH; whence W (the momentum of resistance), which is a measure of resistance, is rendered equal to 2gH, if the resistive force is designated the living, or active, force of the body moved; and it expresses the force of a body in motion, in contradistinction to the simple pressure exercised by a body at rest.

It is commonly asserted that, in the employment of machinery, as much is lost in time as is gained in power, or that the momentum of resistance is proportional to the power employed; but this rule requires some modification. It can be shown to hold good in a well-constructed machine when the object moved resists by inertial force; that is, when the inertia is but a small part of the resistance, the momentum of the latter, or the work done, is found to increase nearly as the square of the power employed.

The machines which have been adopted in machines for regulating the velocities, and for converting one species of motion into another, are notices in the article WHEELS.

Descriptions of the several mills, engines, and machines used in manufactures and other works will be found in Robson's 'Mechanical Philosophy,' in Gregory's 'Mechanics,' and under the word Manufactures in the 'Encyclopaedia Metropolitana.'
MACKENZIE, SIR ALEXANDER, is said to have been a native of Inverness in Scotland, from which he emigrated to Canada when a young man, and there obtained a situation as one of the partners of the North-West Fur Company. He had resided for about eight years in the service of Mr. Gregory at Fort Chipewyan, at the head of the Athabasca lake, in the sanguine country to the west of Hudson's Bay, when he sailed in 1773; having acquired a knowledge of the country and the people, and his intelligence and enterprising character, determined his employers to send him out on an exploring expedition through the regions lying to the north-west of that station, and conjectured to be bounded by the Arctic Ocean, a part of which Green, the author of! ‘Vindications of the North-West Company,’ has lately appeared, with notes, &c., by Professor Whewell.

The ‘Vindications of the North-West Company’ is written in an easy flowing style, and displays a considerable surface of reading, the author having foregone his usual method of following the track of English study at that time. This gave him the advantage over his opponent Burke, whose ignorance of the writings of the French Economists was happily exposed. The ‘Vindications of the North-West Company’ obtained for its author great and sudden reputation.

The ‘History of England’ (published in Dr. Lardner’s Cyclopaedia, in which work the ‘Life of Sir Thomas More’ is also from his pen) he left unfinished by his some,

...
he became one of the ministers of the city of Edinburgh.

Here he continued for the remainder of his life, used as the minister, though not accounted one of the most active and engaging of the preachers in that city. His attention to his theological studies was unabated, and in 1797, at the age of 74, he produced his 'Literal Translation of the Apostle Epistles,' with a large apparatus of Commentaries and Notes, and a Life of the Apostle Paul.

There is an account of the life of Dr. Mackintosh by C.

MACLAURIN, COLIN, one of the most eminent of Scottish mathematicians, was descended of an ancient family in Argyllshire, and was born at Kilmaur, in that county, in 1698. His father was a minister of the kirk, and died shortly after the birth of his third son Colin: his mother also died when he was very young, and the care of his education devolved upon an uncle, who sent him to a university of Glasgow at the age of six.

It is said that in the following year, meeting accidentally with a copy of Euclid, he made himself master of the first six books in a few days, a story utterly incredible upon the mere statement. It is said also, and with much more likelihood, that at the age at which he had invented most of the propositions afterwards published in his 'Geometria Organica.' However this may be, he took the degree of Master of Arts with distinction in the fifteenth year of his age (1713), and afterwards lived in studious retirement.

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MACHEREITHE (Condrodite, Brucite) occurs imbedded in rounded masses, the larger of which present occasional crystalline appearances of rhombic prisms with delabere terminations.

MACO'MA, Leach's name for the Venus tenuis of De Blainville, and similar species. [VERMIDAE.]

MACON, a town in France, capital of the department of Saône et Loire, situated on the right or west bank of the Saône, in 46° 18' N. lat. and 4° 50' E. long.; 265 miles by the road to Lyon through Sens, Auxerre, Autun, and Chlons sur Saône.

Mécon was one of the towns of the Abdai, and is mentioned by Caesar (De Bell. Gall., lib. vii., 68) under the name of Matisco, from the obsolete cases of which the present name, which was formerly written Mascen, is derived. It is mentioned in the Itinerary of Antoninus, and in the Notitia Imperii, in which latter it is designated Castrum, a fortress, and is noticed for the manufacture of arrows. It suffered much from the barbarians who overran the Roman empire, especially from Attila. It passed into the hands of the Burgundians and the Franks; was included in the kingdom of Bourgogne under Boson, and in the duky of Bourgogne under Duke Leopold, and was further injured in the religious wars of the sixteenth century. Before the Revolution it was a bishop's see.

The town is on the declivity of a hill sloping down to the Saône, along the bank of which is a noble quay, from which are distant Alps; its manners, especially conformed with the stream of the centre opposite to the quay: and an antient, perhaps Roman bridge, of thirteen arches, more remarkable for solidity than beauty, connects the town with the village of St. Laurent on the other side of the river, in the department of Ain, which is commonly regarded as a suburb of Mâcon. The streets of Mâcon are crooked, narrow, and ill paved; the houses are usually of stone, and substantially built. Considerable improvements have been made of late years. The ramparts of the town have been demolished and their site laid out in streets. The former cathedral was ruined in the troubles of the Revolution, but the episcopal residence escaped, and is used for the prefect's office. The chief public buildings are the town-hall, the theatre, and the baths, all on the quay; the general hospital, on the parade; the new church of St. Vincent, and the new prison. Among the Roman antiquities are a triumphal arch and the ruins of a temple of Janus. The population in 1831 was 10,998; in 1836 it was 11,944. The inhabitants carry on a considerable trade in the wines of the district, some of which are excellent. There are some manufactures of hosiery, linens, linsey-woolsey, earthenware, clocks and watches, and especially confectionary. There are several tan-yards and cooperages. There is a well frequented weekly market in the town, and a large corn-market is held in the village of St. Laurent. There are several yearly fairs.
MAC

Macon has a high school, a school of municipal instruction, and a drawing-school. There is a society of agricultural science, and art, which possesses a good library. There are three hospitals or poor-houses, and a society for relieving the poor at their own homes. There are a primary court of justice, a tribunal de commerce, and several government offices.

The arrondissement of Macon has an area of 474 square miles, and comprehends 133 communes, and 9 cantons, or districts, each under a justice of the peace. The population in 1831 was 114,061; in 1836 it was 115,777. The environs of Macon are fruitful and productive. Macon had in the middle ages counts of its own. Their county constituted the district of the Maconsiaux, which nearly coincided with the present arrondissement. This district had its own states or assembly for assessing the taxes of Louis IX., otherwise Saint Louis, purchased the county of Macon and united it to the domains of the crown. It formed part of the duchy of Bourgogne, either at its reformation in the reign of Jean II., or by subsequent cession of Charles VII. to the duke Philippe de Bon. [Bourgogne.] Louis XI. reunited it to France.

MACPHERSON, JAMES, was born in 1738, at the village of Ruthven in Inverness-shire, and was sent in 1752 to King's College, Aberdeen, with a view to be educated for the Scotch church. On leaving college he was appointed schoolmaster, in the village of Tyvie, near Inverness, which was so, and finding that situation he gave to the world what appears to have been his first publication, a poem entitled 'The Highlander,' in 1758. Before this date however he had written some critical pieces, which are now contained in the first work of that name, the title-page of which bears the title 'An Ode to the Duke of Argyle,' another called 'Death,' and another called the 'Hunter,' which last is said to have been only a rude sketch of the 'Highlander.' Soon after he sent to the 'Scots Magazine' several contributions in verse, which were preserved from oblivion by the late great controversy that afterwards arose about his capacity for manufacturing the poems ascribed to Ossian, which he professed to have only translated. Some attention appears to have been given to the traditional poetry preserved in their native dialect among the Scotch Highlanders. It is known to have been well known to the Rev. Dr. Carley, minister of Inversesk, a gentleman of extensive connexions among the literary men of his day, and John Home, the author of 'Douglas.' The last met with Macpherson in the autumn of 1759, when he showed them some fragments of Gaelic verse, of which they prevailed upon him to furnish them with translations. These were shown to Dr. Blair, and the poets Shonton and Gray, by all of whom there was great admiration, and these last published under the title of 'Fragment of Ancient Poety, collected in the Highlands of Scotland, and translated from the Gaelic or Erse Language,' with an anonymous preface by James Macpherson. This publication was given in the 2nd volume of Doderley's 'Fugitive Pieces,' London, 1761, pp. 117-163. The fragments are sixteen in number. The effect was to induce the faculty of advocates in Edinburgh to raise a subscription for enabling Macpherson to make a tour through the Highlands with the object of collecting more poetical treasure of the same kind. What he found, or pretended to have found, he brought to London, and published there in two successive volumes, the first of which appeared in 1765, under the patronage of Lord Bute, with the title of 'An Epic Poem, and other lesser Poems.' The second in 1766, with the title of 'Tenors, an Epic Poem in eight books, with other Poems.' From the first, the genuineness of these Gaelic epics was questioned by many persons; but it was more zealously asserted as genuine by Macpherson, in his opposition to the maxim, which he acquired was the beginning of a long course of good fortune. In 1764 he obtained the situation of private secretary to Captain Johnstone, on the appointment of the latter to the governor of Pensacola; and he was also made surveyor-general of the Floridas, in which capacity he went out to America and the West Indies, and returned to England in 1766, retaining his salary of 200l. a year for life. Some of the years that followed he spent chiefly in literary labour, much of it, from the popularity of his name, highly profitable. In 1771 he published, in one vol. 4to., with a preface on the antiquities of the Scottish Celtic race, under the title of 'An Introduction to the History of Great Britain and Ireland; in 1773 a prose translation of the 'Iliad' of Homer; in 1775 a 'History of Great Britain from the Restoration to the accession of the House of Hanover,' in 2 vols. 4to., together with 2 vols. of 'Original Papers,' which last work he sold to the booksellers for 3,000l. During this period of his life he also wrote several pamphlets for the ministry, in support of the war against the American Colonies, and his influence is now as well known as his appointment to the lucrative office of agent for the sale of the royal Negro fleet at the time of the arrival of the fleet. At last he retired to a respectable property which he had purchased in his native county of Inverness, where he died 17th February, 1796. His body was brought back to England for interment in Westminster Abbey. (About 'Ossian,' the editor of which."

MACAURIE, Richard. [Australia.] MACARA'S FISH (MacLeay), a genus of Coleocephalous invertebrates of the section Lamellibranchia, and, according to La- tinelle's classification, belonging to the third division of that group, the Xylopodida. The genera Macraus and Charadriomia constitute two closely allied groups of the family Rutideidae, the species of which are rare in the ocean, and remarkable for the large size of their scutellum. They are of tolerably large size (averaging about three-quarters of an inch in length, or rather more), usually very smooth and glossy, and often exhibit a strong greenish or amber coloration. There is no doubt that these are among the most curious fish in the world; the abdomen, or nearly so, convex above and beneath. The sternum is produced anteriorly in a sharp point, which projects between the anterior pair of fins.

In the genus Macraus the mentum is longer than broad, slightly contracted anteriorly, and without any fringes of hairs on the anterior margin; the mandibles are armed with triangular, and have the apex pointed and notched; the maxillae have several denticulations.

The genus Charadria is chiefly distinguished from Macraus by the obsolescent mandibles, which have no notch at the extremity; the maxilla, having a tuft of hairs and only two denticulations, and the mentum bearing of a somewhat ovate form, distinctly contracted towards the convex margin, the upper part of the mouth in an ovate form; whereas in Macraus one of the claws at least of the four anterior legs, is bidentate. The insects of these genera fly by day about trees, emitting a humming noise, and feed upon flowers. The male formed in Brazil usually contain many of these insects.

Dejean, in his 'Catalogue des Coléoptères,' enumerated twenty-six species of Macraus and five of Charadria.

MACRAUCHENIA, Professor Owen's name for a large and extinct Mammiferous animal, referrible to the order Pachy- derma, but with affinities to the Ruminantia and especially to the Camelidae.

The remains on which the professor founded this new classification are books belonging to an extinct order, more or less fractured; a portion of the sacrum and caudal vertebrae, fragments of the left scapula, of the right humerus and ulna, and right forefoot; the right femur with the proximal and distal extremities of the right tibia and fibula, and the majority of the remaining bones. These portions of the skeleton were discovered by Mr. Dewin in an irregular bed of sandy soil, overlying a hornestone accumulation of gravel on the south side of Port St. John's on the east coast of Patagonia, and belonged to the species Macraus.

Mr. Owen observes that what is described as a perfection of a single transverse process in a cervical vertebra essentially a space intervening between two transverse processes, a rudimental rib, and the body of the vertebra, and the very rare transverse processes to the vertebrae of the structure in the cold-blooded saurians and in the Ornithischia; he observes that the Camelidae differ not only from other ruminants, but from all other existing Mammalia...
the absence of perforations for the vertebral arteries in the transverse processes of the cervical vertebrae, the atlas excepted; and though it is true that in other Mammalia the two transverse processes are manifested on each side with their extremities united by a distinct cartilage, this appears in the fetal state only, for the cartilage afterwards becomes ossified and ankylosed to them. After referring to the structures of the inferior transverse process or its representatives in the Hippopotamus, the Macrauchenia, and the Giraffe, Mr. Owen proceeds thus: 'In the long cervical vertebrae of the Camel and Llama, the upper and lower transverse processes are not developed in the same perpendicular plane on the side of the vertebrae, but at some distance from each other; the lower transverse processes (fig. 1, a) being given off from the lower part of the anterior extremity of the body of the vertebra; the upper ones (fig. 1, b) from the base of the superior arch near the posterior parts of the body of the vertebrae. The extremities of these transverse processes do not become united together, but they either pass into each other at their base, or continue throughout life separated by an oblique groove. This groove would not however afford sufficient defence for the important arteries supplying those parts of the brain which are most essential to life; and accordingly the vertebral arteries here deviate from their usual course, in order that adequate protection may be afforded to them in their course along the neck. From the sixth to the second cervical vertebra inclusive in the Auchenia, and from the fifth to the second inclusive in the Camel, the vertebral arteries enter the vertebral canal itself, along with the spinal chord, at the posterior aperture in each vertebra, run forwards on the outside of the dura mater of the chord, between it and the vertebral arch, and when they have thus traversed about two-thirds of the spinal canal, they perforate respectively the superior vertebral lamina, and emerge directly beneath the anterior oblique or articular processes, whence they are continued along with the spinal chord into the vertebral canal of the succeeding vertebrae, and perforate the sides of the anterior parts of the superior arch in like manner; and so on through all the cervical vertebrae until they reach the atlas, in which their disposition, and consequently the structure of the arterial canals, resemble those in other Ruminants. The two cervical vertebrae of the Macrauchenia present precisely the structure and disposition of the bones canals for the vertebral arteries which are peculiarly characteristic of the Camelidce among existing Mammalia.' Fig. 2 shows the groove and orifice of the canal for the vertebral artery in a section exposing the spinal canal. Mr. Owen then goes on to show that the vertebra of the Macrauchenia also closely resemble the middle cervical vertebrae of the Vicuña and Llama in their elongated form; approaching the Auchenial division of the Camelidce, and deviating from the true camels in the relations of the length of the body of the vertebra to its breadth and depth, and in the much smaller size of the inferior processes. The author observes that, excepting the Giraffe, there is no existing Mammal which possesses cervical vertebrae so long as the Macrauchenia; but that the cervical vertebrae of the Giraffe differ from those of the Macrauchenia in the situation of the perforations for the vertebral arteries, and in the form of the terminal articular surfaces. Both the cervical vertebra described by Mr. Owen are of the same size, and each measures 6½ inches in external length, 2 inches 10 lines in breadth, and 2 inches 4 lines in depth. Among the peculiarities of structure, a small longitudinal process (fig. 2, c) is given off immediately below the base of the anterior process, and this is not observable in any of the cervical vertebrae of the Giraffe or Camelidce. In the form of the articular surfaces of the bodies of the vertebrae, the Macrauchenia deviates from the Giraffe and Camel, but resembles the Auchenia. The anterior articular surface is convex and almost hemispheric in the Giraffe and Camel, whilst the posterior surface is proportionally concave in both. The neck is articulated by ball and socket joints, yet not, as in most reptiles, with intervening synovial cavities, but by means of the concentric ligamentous intervertebral substance characteristic of the Mammals. The degree of convexity and concavity in the articular surface of the bodies of these vertebrae in the Llama and Vicuña is much less than in the Camels, and the former consequently carry their necks more stiffly and in a straight line. The anterior articular surface in Macrauchenia is less convex than it is in the Llama, and the posterior surface is less concave. From an analysis of the comparative structure of these vertebrae in the Camels, the Llamas, and the Macrauchenia, Mr. Owen infers that the latter carried its neck in the same stiff and upright position as is manifested in the Llamas.

Cervical Vertebrae (1, 2) of Macrauchenia, and (3, 4) of Auchenia, half nat. size.

There is not in the collection a fragment of dorsal vertebra, ribs, or sternum; but the seven lumbar vertebrae form a consecutive series from the same individual as that which the cervical vertebrae belonged; and though these lumbar vertebrae do not possess such distinctive characters as those of the neck, they contribute not unimportantly to the illustration of the osteology of the animal and its affinities. No existing Pachyderm has more than six lumbar vertebrae; the Camels and Llamas only, among the Ruminants, possess seven; and here Mr. Owen discovered modifications of form in which the Macrauchenia deviates from the Camelidce and approaches the Horse and Hippopotamus. In the Macrauchenia, as in the Rhinoceros, Tapir, Hippopotamus, and Horse, the transverse processes of the last lumbar vertebrae are of considerable thickness and extent, and are joined by anarthrosis to the transverse processes of the sacrum; but the bony structure of these joints would indicate that they were not subject to be obliterated by ankylosis.

Sufficient of the sacrum and osa innominata remain to enable Mr. Owen to state that the sacrum was anchylosed to the ilia: the lower boundary of this anchylosis is marked below by an external ridge, and by vascular canals and grooves in the substance of the bone, as in the Hippopotamus.
Of the remaining portions, the ankylosed fore-arm and leg, and the fore-foot, are the most characteristic. The portion of the antebrachium which is preserved presents a condition of the radius and ulna intermediate to those which respectively characterize the same bones in the Pachyderms and Camels. In the former, the radius and ulna are separate bones, united in the same position by a ligament, but so organized that the movement of supination cannot be effected. A bony confluence joins these bones partially in the ordinary Ruminants, but this rarely extends to the proximal extremities. In the Camel and the Llama the ankylosis is complete, so that no trace of the original separation of the radius and ulna is perceptible, and the olecranon, or elbow, appears as a mere process of the radius. The ankylosis in Macrauchenia is also complete, but the boundary-line is clearly defined, and the proportion which each of the bones contributes to the great articulating surface for the distal end of the humerus is easily distinguishable.

Mr. Owen has compared the bone (which he justly says is the very one that an anatomist would have chosen, had his choice been limited to a single bone) with the astragalus of the Giraffe and other Ruminants, the Camel, the Anoplotherium, the Hippopotamus, Rhinoceros, Tapir, and Paleotherium; and he comes to the conclusion that it is with the Pachyderms having three toes to the hind-foot that the Macrauchenia agrees in the most distinguishing characters of this valuable bone. The results of a paper of minute detail, great research, and happy combination, are thus summed up by the professor.

Thus we obtain evidence, from a few mutilated bones of the true and extremities of a single representative of a race, that there once existed in South America a Pachydermatous quadruped, not proboscidian, which equalled in stature the Rhinoceroses and Hippopotamuses of the Old World. But this, though an interesting and hitherto unsuspected fact, is far from being the sum of the information which is yielded by these fossils. We have seen that the single unequal phalanx bespeaks a quadruped of the great series of Ungulata, and this indication is corroborated by the condition of the radius and ulna, which are fixed immovably in the prone position. Now, in the ungulates: series there are but two known genera—the Rhinoceros and Palaeotherium—which, like the quadruped in question, have only three toes on the fore-foot. Again, in referring the Macrauchenia to the tritostyle family of Pachyderms, we find, towards the close of our analysis, and by a detailed comparison of individual bones, that the Macrauchenia has the closest affinity to the Palaeotherium. But the Palaeotherium, like the Rhinoceros and Tapir, has the ulna distinct from the radius, and the fibula from the tibia, so that even if the Parian Pachyderm had actually preceded the other peculiarity of the cervical vertebrae as the Patagou in a race that would have been hazardous, to say the least, were ignorant of the dentition of the latter, to refer it to the genus Palaeotherium.

Most interesting indeed will be the knowledge, whenever the means of obtaining it may arrive, of the structure of the skull and teeth in the Macrauchenia. Meanwhile we...
cannot but recognise in the enchlosed and conjoined state of the bones of the fore-arm and leg, a marked tendency in it towards the Ruminant order, and the singular modifications of the cervical vertebrae have enabled us to point out the precise family of that order with which the Macruchenia is more immediately allied. In first demonstrating this relationship it was shown in how many particulars the Camelidae, without losing the essential characters of Ruminants, manifested a tendency to the Pachydermatous type; and some of the species of Anoplotherium, bear to a reciprocal transition from the Pachyderms to the Ruminants through the Camelidae, cannot but be viewed with extreme interest by the zoologist engaged in the study of the natural affinities of the animal kingdom.

The Macruchenia is not less valuable to the geologist in reference to the geographical distribution of animal forms. It is well known how unlooked-for and unlikely was the occurrence of the evidence of an extinct quagga entombed in the Paris basin, whose closest affinities were to a genus (Tapirus), at that time regarded as exclusively South American. Still greater surprise was excited when a species of the genus Didelphys was discovered to have crawled from its burrows, or even wandered on the surface of the earth, for on the other hand, we find in South America, besides the Tapir, which is closely allied to the Palamothere, and the Llama, to which the Anoplotheres offers many traces of affinity, the remains of an extinct Pachyderm, nearly akin to the European forms. In this enlightened or nearly enlightened age, this Macruchenia is itself in a remarkable degree a transitional form, and manifests characters which connect it both with the Tapir and the Llama. (Zoology of the Voyage of H. M. S. Beagle.)

MACRINUS, OPILIAUS, a native of Mauritania, was prefect of the praetorium under Antoninus Caracalla, whom he accompanied in his expedition against the Parthians, and caused to be murdered on the march. [CARACALLA.] Macrinus was immediately proclaimed emperor by the army, A.D. 217, but was defeated by Diocletian, who was proclaimed Caesar; both elections were confirmed by the senate. Macrinus, after a battle with the Parthians near Nisibis, concluded peace with them. On his return to Antioch, he was murdered by officers introduced by Caracalla. But his excessive severity displeased the soldiery, and an insurrection, excited by Messa, the aunt of Caracalla, broke out against Macrinus, who, being defeated near Antioch, fled as far as Cachlodon, where he was arrested and put to death. A.D. 218, in a general slaughter of Diocletian's party, which was succeeded by Elagabalus. (Dion Cassius; Capitolinus.)

MACRO'BIUS, AMBRO'SIUS AURELIUS THEODOSIUS, probably lived in the middle of the fifth century of the Christian era. His works are mostly preserved in the writings of his pupils, and generally supposed to be the writing of a man who is mentioned in the Cod. Theod., vi. 8, as 'chamberlain of the royal bed-chamber' (sacri cubiculi prefectus), during the reigns of Honorius and Theodosius the younger, but he does not appear certain. It has sometimes been questioned whether he was a Christian or a pagan; it has been supposed, from his occupying such a rank at the court of a Christian emperor, that he must have belonged to the Christian religion; but this opinion seems quite at variance with the whole scope of a few of his works. The place of his birth is uncertain; but he informs himself, in his preface to the 'Saturnalia,' that the Latin language was not his mother-tongue.

Three works of Macrobius have come down to us: a commentary on the Saturnalia, the second pair of ten tenes, of Cicero's 'Republic'; 'Dialogues,' which were supposed to have taken place during the Saturnalia at the house of Vettius; and a 'Treatise on the Latin and Greek Verb,' which however is imperfect.

The 'Saturnalia,' or 'Somnium Scipionis,' which is divided into two books, is addressed to his son Eustathius. It is principally occupied with the opinions of the later Platonists respecting the laws which govern the earth and the other parts of the universe. There is a Greek version of this commentary by Maximus Plinius, in the king's library at Paris. The 'Saturnalia' is however the most important and interesting of the works of Macrobius. Although written in very late Latin, and full of trifling absurdities, it contains a vast amount of information on many subjects relating to antiquity. It is divided into seven books; the first contains a discussion on the origin of the Saturnalia and the principal Roman festivals, and on the character and history of several of the Roman deities: the second is of a more discursive nature; it unfolds at great length the whole art and mystery of looking according to the Roman motions, and relates some of the best jists of Cicero, Augustus, and other celebrated Romans, which however would scarcely excite a smile in modern society; it also gives a long account, among other things, of the luxury of the Romans, and contains a particular description of the Roman ditties. The third, fourth, fifth, and sixth books are occupied with an examination of Virgil's poems, in which a list is given of the principal passages which he imitated or copied from the Greek or preceding Latin poets; and the seventh is principally occupied with a discussion respecting the different kinds of food, and their effect on the human system.

The best editions of Macrobius are by Gronovius, Leyden, 1679; Zeunius, Leip., 1774 (which is said however, in the literary notices prefixed to the Bipont edition, to be very inaccurately printed); and the Bipont, 2 vol., 1782.

MACRODA'LYLES, Cuvier's name for a family of Wading Birds (Echastes) [Gallistereus], which have very long feet, formed for running over marshy or water regions, or even for swimming, and which are divided into species which have the feet fringed or bordered. There is not however any membrane between the bases of the toes, not even between those of the external ones. The bill, which is more or less compressed on the sides, is usually crested and divided. It is only a large and delicate, however arriving at the fineness or weakness of Cuvier's preceding family. [LONGITREUS.] The body of these birds is also singularly compressed, a conformation which is governed by the narrowness of the sternum: their wings are moderate or entire, and their flight weak. The hind toes are all rather long. Cuvier observes that this family has been divided into two tribes, according to the presence or absence of the spur on the wing; but he adds that this character is not exclusive, and therefore excepting the genera arranged by Cuvier under this family, which terminates his order Echastes—Porra, Palamedea (including Charina), Megapo'dius, Rutilus, Palmea (including Gallinula and Porphyrio), Chlamia, Forst. (Vignalia, Latii), Glaucora, Gen. Phaenoceras. Cuvier's fifth, sixth, and seventh orders do not succeed this family, which is somewhat heterogenous, and composed of birds whose habits are not similar. Phaenoceras cannot be said to be without any membrane between the bases of the toes, &c.; for its anterior toes are united to the nails by a line of skin, of which those opposite to them are free.

MACRODITES. [Poraminifera, vol. ii. p. 348.]

MAC'ROPA. [Megalopa.]

MACROPH'HALUS. [Gonoplas.]

MAC'ROPODUS. [Leptopodia.]

MACROPODUS. A tribe of numerous decapod Crustaceans, being the first of the family of Oxypodini (Milne Edwards), and nearly corresponding with the genus Macroopus of Latreille, remarkable for the enormous length of their feet, which has been obtained for them the name of Sea-Spiders.

Form of the Carapace various, but in general triangular, very often not extending upon the last thoracic ring. The anterior feet short, and nearly always very slender; those of the succeeding pairs always more or less dilated; the length of the second pair often nine or ten times the length of the post-frontal portion of the carapace, and always much exceeding the double of that portion; the succeeding feet in general very long also. The basilar joint of the external antennae nearly always constitutes the major part of the external process, the principal lobes differing but little from the front. In the greater portion of the tribe the third joint of the external first-feet is inclined to oval or triangular, longer than it is wide, and does not support the succeeding joint, nor is it the external angle, as in the oxypodini. (M. Edwards.)

Habits, Food, &c. The localities of the Macropodians are considerable depths in the sea, where they lie hid among the sea-weeds; they are also found on oyster-banks. They feed slowly and: gradually, and must render them not formidable to other marine animals, and the probability is that they live principally on Annulidae, Planaridae, and small mollusks. (M. Edwards.)

General. Lepidoptera. (Leach.)

Established at the expense of the genera Inachus of Fabricius and Macroopus of Latreille. M. Milne Edwards
observes that it is very remarkable for the general form of its body and the excessive length of the feet; and states that it presents in an exaggerated manner all the distinctive characters of the family and of the tribe to which it belongs.

**Generic Character.**—Carapace nearly triangular, and not covering the last ring of the thorax; rostrum styliiform and of enormous length; eyes large and not retractile; internal antenna, when folded back, following the longitudinal direction of the body. First joint of the external antenna very long and completely confounded with the neighbouring parts of the shell, the second inserted at a considerable distance in front of the orbits and below the rostrum. Epistome much longer than it is wide. Third joint of the jaw-feet nearly triangular, and carrying at its external angle the succeeding joint, which is very much developed. The sternal pleatral as long as it is wide, but very much narrowed between the first pair of feet, wider, are truncated and extremely long, but less than any of the rest; the length of those of the second pair equals nine or ten times the length of the post-frontal portion of the carapace. Abdomen in both sexes composed of six joints, of which the first, which is very much developed, and as long as it is wide, occupies the dorsal surface of the body, while the last is formed by the soldering of the sixth and seventh abdominal rings. (M. Edwards.)

**Geographical Distribution of the Genus.**—Coasts of America and of the Antilles, as far as is at present known.


This genus is very nearly allied to *Stenorchynchs* and *Inachus*, but is distinguished from all the other genera of this family by the form of the posterior feet and some other characters.

**Generic Character.**—Carapace, as in the greater part of the family, not extending on the last segment of the thorax, nearly triangular, and convex on the basal region. Rostrum nearly null; eyes not retractile, and curved upwards rather long peduncles; first joint of the external antenna shorter than wide, and not connected to the front and advancing above the level of the anterior canthus of the eyes; the second joint inserted on the sides of the rostrum and entirely exposed above. Epistome nearly square; third joint of the external jaw-feet longer than wide, nearly triangular, and giving attachment to the succeeding joint near its anterior and external angles. Sternal pleatral suddenly narrowed between the anterior feet, which are slender and short, while those of the succeeding feet are styliform; the second pair are nearly twice and a quarter longer than the post-frontal portion of the carapace, and terminate by a styliiform and entirely straight joint; the succeeding feet are much shorter, and the terminal joint of the four last is large, compressed, and styliform. Abdomen composed of six joints in both sexes. (M. Edwards.)

**Geographical Distribution of the Genus.**—*Achirus* hitherto, been only found in the British Channel.

Example, *Achirus Cranachii*. 

*Stenorchynchs Philangium.*
Description.—Rostrum formed of two small triangular teeth and not extending beyond the second joint of the external antennae; a spine on the anterior face of the ocular peduncles; genital and cardiac regions elevated in the form of tuberces; feet with very long hairs, and hooked.

Length from six to eight lines. Colour brown.

Locality, Habits, &c.—Falmouth in England, and the mouth of the Rance near Saint Malo. The species lives among the sea-weeds and oysters.

Localities. Euryopidius Latreillei.

Locality.—Falkland Islands.

Amathia. (Roux.)

This genus agrees in some respects with the *Pericera* of Latreille; indeed the aspect of both is the same, but the external antennae of *Amathia* have not the peculiar disposition which is visible in *Pericera*, and the space which the orbits leave between them is scarcely wider than the base of the rostrum, whilst in *Pericera* it is more than double.

Genetic Character.—Carapace in the form of an elongated triangle with a rounded base; its upper surface and its borders beset with enormous spines; the rostrum, which is terminated by two large divergent horns, nearly as long as the post-orbital portion of the carapace. Eyes small and partially protected by a spine which occupies their external canthus, but, as in the preceding genera, they are not retractile and always remain projecting. External antenna presenting nothing remarkable; the basaliary joint is long, very narrow, and soldered to the front; the stem is inserted under the rostrum, at some distance before the level of the eyes; it is very slender, and its two first joints are of equal length. Epistome large and nearly as long as it is wide; the third joint of the external jaw-facet is inserted outwards and truncated at its two internal angles. The first pair of feet are shorter than the succeeding ones; they are filiform in the female and a little convex or swollen in the male. The succeeding feet are long and filiform; the second pair are more than thrice as long as the post-orbital portion of the carapace, without including the posterior spine; the others are much shorter, their terminal joint is long, sharp, and without either spines or teeth on its inferior surface. *Abdomen* composed of seven joints in both sexes. (M. Edwards.)

Example, Amathia Rissoana.

Description.—Carapace armed with thirteen enormous spines, three of which elevate themselves from the stomachal region, one from the cardiac, and the others occupy the border of the pleon; one on the intestinal region, three on each side upon the branchial region, and one upon each of the hepatic regions: there is a small spine in front of the eyes, and a larger one at the anterior angles of the buccal frame. Feet, as well as the carapace, covered with a sort of down. Length about two inches; colour yellowish, with two spots, red upon the front.

Locality.—Toulon.

Inachus. (Leach.)

The genus *Inachus*, as established by Fabricius, comprehended nearly all the *Ozyrhynchi*, with the exception of the *Parthenopidae*. The genus is now much restricted.

Generic Character.—Carapace nearly triangular, not much longer than it is wide, and highly embossed above.

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lateral edges of the carapace, instead of joining the orbits, directed towards the anterior border of the buccal fissure; rostrum short and very narrow; the orbits directed obliquely forwards, and entirely lodging the eyes, which are very small, and have no trace of a spine at the inner angle of their upper border, a character which renders them easily distinguishable from the _Libinia_. The basal joint of the external antenna advances much beyond the internal canthus of the eyes, and terminates nearly in a point under the front, to which it is intimately united; the second joint of these antennae is short and placed near the edge of the rostrum; the third and the fourth joints are very small. _Epistome_ very little developed, and much wider than it is long. The third joint of the external jaw-feet is nearly square, slightly dilated outwards, and rather deeply notched at the internal and anterior angle. _Sternal _plastron nearly circular; the anterior feet weak and very small, not more than once and a half the length of the carapace, the hand nearly cylindrical. The succeeding feet very long, though not always equalling those of the _Eugennea_, slender, and cylindrical; their terminating joint long and styliform; the second pair from twice to three times as long as the post-frontal portion of the carapace, and the succeeding pairs diminishing progressively. The abdomen varies; sometimes only five distinct joints are to be detected in that of the female; sometimes there are seven, as in the male.

M. Milne Edwards, who gives the specific character here stated, observes that the _Docola_ bear the greatest analogy to the _Eugennea_, and establish the passage between those _Macropodians_ and the _Libinia_ which belong to the tribe of _Majtians_. [MAD.]

Geographical Distribution of the Genus.—Where known, the Indian Seas. Example, _Docola Rissonii_.
Locality unknown. (Hist. Nat. des Crustacés.)

MACROPUS, the scientific name for the Kangaroo. [MARSUPIALA.] The term is also used by M. Lathrel to designate a genus of brachyurous decapod crustaceans [MACROPODIANS.]

MACORHAMPHUS. [SCOLOPACIDÆ.] MACCOURA, or MACRUWA, the scientific name for that section of Crustaceans which have the abdomen, usually called the tail, long in contradistinction from that section (Brachyurus), which have the tail short. The common lobster is an example of a Macrurous crustacean, and the common crab of a Brachyurous crustacean. [CUSTACIA, vol. viii., p. 197.]

MADAGASCAR, (called by the natives Madejanes), a large island in the Indian Sea, about 240 miles from the coast of Mozambique on the eastern shores of Africa, extends from 12° 58' S. lat. to 25° 43' S. lat., and between 45° 10' and 51° 45' E. long. From north to south, between Cape Ambré or Natal, and Cape Mary, or Romain, it is 960 miles long, with a width varying from 200 to 500 miles: it is estimated to cover a surface of 225,000 square miles, or somewhat more than the extent of France. It is separated from the continent of Africa by the Channel of Mozambique.

Though a short description of this island occurs in Marco Polo, and it was discovered by the Portuguese in 1506, we are still very imperfectly acquainted with its natural features and riches. It is stated that a mountain-range traverses the island in its whole length, and that some of the summits
rise to an elevation of 10,000 or 12,000 feet. Its slopes cover the greater part of the interior, and in some places approach to the very shores of the sea, especially along the western coast between Cape Passavada and Cape Ambré, where the stupendous peak of Mataoula raises its head not far from the shore, and also south of Cape St. Andrew in different places. But between Cape St. Andrew and Cape Passavada a low sandy plain extends along the shore, and runs 60 or 80 miles inland, crossed by the streams of the basin, and the loamy, sandy and clayey soils, admirably adapted for commerce, but they are all neglected, with the exception of Bambatokoa. The eastern coast seems to be high and rocky from Cape Ambré to the large bay of Antongali, one of the most spacious harbours of Madagascar. The climate is low and swampy to a distance inland varying from 10 to 40 miles, and extremely unhealthy. In the interior the country in many places contains extensive plains, which are excellent pasture-ground, and frequently possess a soil adapted to the culture of rice. Bambatokoa Bay, on the western coast, is the estuary of several rivers. It is a mile and three-quarters a mile wide at the entrance; but inside it is nearly eight miles wide. Bambatokoa itself is an inconsiderable village, but Majunga, on the north side of the bay, is a large town. The harbour of Thanaan-arrive, the capital of the Ovahs, is the most powerful, industrious, and civilized nation of the island. Vessels drawing 15 feet water can proceed to Majunga and 12 miles further. It is said that wild elephants are met with along the rivers Betsookoa, a distance of 10 miles, there is an extensive lagoon, deep enough to be navigated by vessels of considerable burden; and in spring-tides the water rises 20 feet at the mouth of the river. From its mouth to Thanaan-arrive is a distance of 245 miles; and from the point where the navigation terminates merchandise is carried overland to Thanaan-arrive, a distance of about 85 miles. Following the road from Majunga along the Betsookoa to the capital, the country is low near the sea; but, well adapted to the culture of rice, 40 miles farther, the land is more elevated and the jungle tree (Sagus rafoa) abounds. Then for 70 miles a barren country intervenes, and the remaining distance of 75 miles to the capital is rather a level country, in which rice cultivation is more general.

Thanaan-arrive is situated in 18° 56' S. lat. and about 47° E. long., at an elevation of about 4000 feet above the sea level. In 1817 it had more than 90,000 inhabitants, but it has since much increased. It contains some well-built houses, and churches but their buildings are erected in modern times, under the reign of Radama. It has not the fast frequent communication between this place and Tamatave, a seaport on the eastern coast (18° 45' S. lat. and 44° 31' E. long.), which has a good anchorage with a large harbour; but the country however is between reefs, and ships are exposed to easterly winds. It carries on some commerce, though it was destroyed by the French in 1819.

South of Tamatave is the mouth of the river Mananono, or Manamano. It traverses an extensive country, which is generally level, and of great fertility, and contains extensive pastures. The Mangarow seems to be the most important river which descends from the eastern declivity of the interior mountain range. According to all accounts the climate of Madagascar is not so hot as might be expected from its geographical position. The elevated range in the interior, and the wind constantly blowing from the sea, render the heat supportable. The island is subject to great famines, which debt is caused by the inhabitants, who are not only improvident but also suffer from the want of many of the articles necessary for life; and the want of rice is a great evil. This country is divided between the dry and the wet seasons. The former is the hotter of the two, the rain has only then on its eastern side, and the latter the west. The rain is generally divided into four or five months, the first and second months being the wettest, and the second the wettest. Then the north-west monsoons, which blow when the sun is in the southern hemisphere, rains are abundant, and sometimes necessary for several days.

It seems that Madagascar contains a very large proportion of fertile soil, and will produce nearly every kind of grain. Rice is the principal object of agriculture; there are eleven varieties indigenous in this island, and it is cultivated either on high or low ground, but with little care. Other plants which are raised are manioc, or cassava root, Indian corn, and sweet potatoes. These plants have been imported, and their culture spreads more and more over the island. Indigenous plants used as food are the prickly yam (Dioscorea aculeata), and another species (Dioscorea bulifera), the edible arum, or broad fruit, and particularly diverse of plantain; also the Maranta Madagascanrensis, which produces arrow-root, and is very nutritious. The Sago rafoa is much cultivated on account of its leaves, the fibres of which are ingeniously woven into cloth which is used in many parts of the nation. Of the staple articles of diet, higher classes are manufactured of silk or cotton. The silk-worms of this island are of a large size, and suspend their cocoons from the branches of trees. They feed on the leaves of Cissus Cujan, or Pigeon-pea, which is indigenous in Madagascar, and raises a considerable quantity of silk. The leaves of the island tree are used in building and thatching houses. There are a number of tobacco plants indigenous to this island. Coffee has been introduced by the French, and succeeds very well. The coconut-nut tree and the mangrove abound along the shores.

Only cattle, sheep, fowls, ducks, and geese are kept. Wild swine are numerous, and on the western coast it is a rare sport to catch only a few. A certain nation, living on the island of Madagascar, have the land of one tribe is cultivated by all the men and women, and the produce of the soil is divided among them. The large wild animals of the African continent are not met with, but macacus, cainams, and serpents abound.

The mineral wealth of the island is not much known. It is certain that iron-ore, potters' clay, plumbago, and tin are abundant, and is stated that silver and copper also occur in the mountains.

The population is estimated to amount to between four and five millions. The inhabitants seem to belong to different races, which have mixed together, and speak only one language; it is called Malagasy, and its words are of Malay origin. The inhabitants of the island are short, rather darker than mulattoes, with thin foreheads, broad and flat faces, and large eyes and mouths. Their hair is long but clipped.

The Ovahs, who inhabit the elevated plains in the interior, live in height rather like the English, and have substantial dwellings. In agriculture and the arts connected with it they are perhaps not inferior to the inhabitants of Java, and certainly not to those of Sumatra. The Ovahs are distinguished by their curious articles in manufacture, clothing, and cotton, in forging iron, and they apply to various purposes, from the blade of a lance down to a needle, and in the making of silver and gold chains, balances, and other articles, in which great ingenuity is displayed. Their language is written in the Arabic character. Their religions are Pagan, not for want of Christianity, writings; a circumstance which may partly explain why the exertions of the Christian missionaries who have been sent to this island in recent times have been more successful here than in most other countries. It appears that by a royal edict of 1832, the public profession of Christianity is forbidden in the island. Those who violated the edict have been punished with confiscation of their property; and the married man who professes Christianity has been sold by his wife for a hundred francs to a woman, after being in vain menaced, with the view of inducing her to impel her companions, endured an ignominious and cruel death (August, 1837) with all the constancy of a Christian martyr. (Missionary Register, Jan. 16.)

Malagasy is said to be divided into twenty-two states, governed by kings; but in the present century most of them were subjected to the sway of the Ovahs, by King Radama, who died in 1889. This extraordinary man, who was an enchanter of character, was引进 into his country the arts and civilization of Europe. He established a communication with the English in the island of Mauritius. He received and protected the missionaries, and promoted the establishment of schools, the number of which at the time of this death increased to more than 100, in which nearly 5000 children were in
A MAD

The land, having been harrowed flat, may now be laid into narrow beds by digging out the intervals with the spade; the surface being raked or harrowed smooth, the planting may begin without delay.

The plants are raised in a seed-bed, or they are thinned and suckers from old plants. The first are a truest, and the second is much more satisfactory, for if an old seed is sown, it may not rise the first year. When a good seed has been obtained, the seedlings are either sold as such, or preferred to seedlings; but when there is any appearance of the plants degenerating, a fresh sowing is had recourse to.

These suckers or shoots are taken off the crown of old plants, when they have thrown out fibrous roots. They will then readily grow if transplanted. In southern climates this is done in autumn or winter, that they may not be scorched by the summer's heat. In northern climates June or July is the proper season when the shoots are taken to be planted.

In some places the madder plants are put in with the plough. A deep furrow is drawn, and the plants are placed against the furrow slice turned up; the roots of the plough cover them, and makes a fresh bed for the next row. This practice is easy, and the advantage is considerable.

When the madder plants begin to grow, they must be well weeded and earthed up with the hoe. Liquid manure should be poured into the intervals, and the earth improved with it thrown around the plants.

The attention to weedings and earthing up must be continued till the roots are fit to be taken up, which is the third year.

The stems and leaves of madder are often cut as fodder for the cattle, and are very fond of them; it is used as a colouring matter in so many cases of dyes. Madder is dyed on madder for a considerable time having tinged a red colour. This practice is not to be recommended, as it may injure the growth of the plant.

The root is a large, white, and fibrous root, much forked, which must be abundant, with every part, that, wherever the roots spread, they may find sufficient nourishment. It has a small root spreading in the ground, and in which there is a good proportion of humus, will suit this plant. Rich land, with a good depth of soil, is taken for madder, the root which must be abundant, with every part, that, wherever the roots spread, they may find sufficient nourishment. If it has lain for a considerable time in grass before it is ploughed up, it will be all the better.

The preparatory tillage of the land must be so as to pulverize the ground, and land in which these roots can spread and take root, which must be abundant, with every part, that, wherever the roots spread, they may find sufficient nourishment. It has a small root spreading in the ground, and in which there is a good proportion of humus, will suit this plant. Rich land, with a good depth of soil, is taken for madder, the root which must be abundant, with every part, that, wherever the roots spread, they may find sufficient nourishment. If it has lain for a considerable time in grass before it is ploughed up, it will be all the better.

The manure used for madder must be well rotten and rich. Madder is a crop that demands a considerable time before it is used. Good stable dung which has heated to a certain degree, and been turned over two or three times before it is mixed with earth, is the best. This earth should be affected with manure-furrows in meadows and laid in heap for some time. The dung should be put in layers with this earth, and if the whole can be well watered with urine or the drainings of the yard, and then mixed up by the spade, the compost will be much superior to fresh dung alone. The surface of the bed should be ploughed up in before the winter. In spring another tillage may be given to destroy all weeds, and make the soil uniform to the depth of two feet at least.

<table>
<thead>
<tr>
<th>Year</th>
<th>Madder Root</th>
<th>Ground Madder</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1829</td>
<td>54,419</td>
<td>70,617</td>
<td>125,036</td>
</tr>
<tr>
<td>1833</td>
<td>56,662</td>
<td>61,397</td>
<td>118,059</td>
</tr>
<tr>
<td>1834</td>
<td>80,296</td>
<td>72,003</td>
<td>152,305</td>
</tr>
<tr>
<td>1835</td>
<td>65,923</td>
<td>154,107</td>
<td>219,030</td>
</tr>
<tr>
<td>1836</td>
<td>85,231</td>
<td>149,491</td>
<td>234,722</td>
</tr>
<tr>
<td>1837</td>
<td>109,235</td>
<td>84,841</td>
<td>194,076</td>
</tr>
<tr>
<td>1838</td>
<td>73,669</td>
<td>97,443</td>
<td>171,112</td>
</tr>
</tbody>
</table>

Nearly the whole of these importations are obtained from Holland, France, and Turkey. In 1837, the latest year for which we have such particulars, there were brought from Holland 34,279, and from France we received 120,574 cwt., of which about one half was in the like state of preparation; and from Turkey 36,673 cwt. of the unprepared roots. Some small quan-

Carnations are brought in almost every year. Of this year, we have received from 2000 to 3000 cwt. annually from India. The duty chargeable on consumption is 2s. per cwt. on the prepared madder, and 6d. per cwt. on the roots.

MADEIRA, an island situated in the Atlantic Ocean, between 34° and 11° 59' north latitude; and 1832 and 1837, nearly that of Huntingdonshire.

This island is a low one, rising with a fairly steep ascent from the south and from the north towards the interior, where the highest part of the mass runs from south to east of the north-west of Cape de S. Lourenço on the east to Cape de Fergo on the west. This, the most elevated portion of the rock, is approached by steps formed on the declivities of the rocks, to the height of 2300 feet above the sea. The rocks in most places come down to the very shore of the sea, and enter it with so rapid a descent, that soundings are to be only found close to the shore, and even there on a rocky and uneven ground, and at a depth of 35 to 50 fathoms.

The climate of Madeira is very mild. The mean temperature of the year does not exceed 68°. In the months of December and January it is only 58°, for the whole of the year below 60°; the mean temperature of that season being 63°. The mean temperature of the hottest months (August and September) is between 73° and 74°; but when the eastern and south-eastern winds bring to the island the hot air from the African desert, the thermometer rises as high as 85° and even 90°. Rain is not confined to a certain season of the year, but occurs at all seasons. Madeira sometimes suffers from hurricanes. The climate is considered very healthy, and many persons in England who are suffering from consumption can draw to it for the purpose of diminishing their sufferings and prolonging their life.

In the lowest region of the island, to about 750 feet above the sea-level, many tropical plants are cultivated, as the date palm-tree, the platanum, two kinds of cactus, the sweet potato, Indian corn, coffee, and the American agave (Aglave Americana), as well as the sugar-cane, the olive-tree, the pomegranate, and the fig. Above this region, to the height of 1500 feet, the sea-level, the fruits and grain of Europe, especially wheat and maize, are raised; and in this region are also the extensive vineyards, which furnish the most important article of exportation. Then follows a tract covered with high trees, which rises to the height of 3000 feet, and in which Agave Americana, and trees and roots are found which do not occur in Europe. This region contains also extensive forests of chestnut-trees, the fruit of which is the common food of the inhabitants. Its surface is extremely broken, and bare rocks appear in many places. The highest part of it rises to the height of 6800 feet, and is covered with heath, fern, and in some places with fine grass, which preserves its verdure through the greater part of the year, this region being frequently enveloped by dense fogs, and subject to heavy dews.

A few horses are kept, and most of them are imported. Cattle are more numerous, and of a large size. Asses are the most common domestic animals, and best adapted to the roads of the country as beasts of burden. Hogs are
rather numerous, as well as fowls. In the interior there are many wild swine and rabbits. Birds are not numerous, and fish is rare, on account of the great depth of the sea which surrounds the island. Salted cod constitutes one of the most important articles of import.

MAD:

MADIA, a genus of South American herbaceous plants of the Composite order, one of the species of which, M. sativa, is of value for the oil yielded by its seeds under pressure.

The genus forms the type of Madia, a division of the scentless tribe of De Candolle, and is distinguished among its congers by its roundish one-rowed involucres, the bracts of which are keeled and envelop the grains, by a plane receptacle papillose at the margin and naked in the middle, and by its small achene, which have four or five angles, and taper to the base. Madia mire, which forms the only species, is a upright, glandular viscid Chilian annual, with oblong entire leaves, half amplexical, opposite at the bottom of the stem and alternate at the top; the flower-heads are racemose and the balsam yellow. It has been cultivated in Texas and apparently in California, for the sake of its oil, which is of excellent quality. It has lately attracted attention in Europe in consequence of Mr. Bosch, the superintendent of the gardens of the king of Wurttemberg, having succeeded in opening the flower by heating the balsam yellow on a large scale. He found that as compared with rape and poppies the amount of oil yielded per German acre was as follows:

Rape yields 240 lbs of oil per acre German.
Poppies 264 lbs.

This oil does not congreg at 19° below zero of Raimo, but only becomes a little less fluid, which makes it a valuable material for keeping machines in order. The seeds were sown in October, and from four to six pounds are required per acre. The crop is of a small size, and the yield is only about one-sixth of the quantity sown.

MADISON, JAMES, was born on the 5th of March (o. s.), 1751, at the seat of his maternal grandmother, near Port Royal, on the Rappahannock river in Virginia. His father was Dr. Carter Madison of Accomac county, Virginia, where Mr. Madison always resided. He received his first instruction from Donald Robertson, a Scotch teacher in King and Queen County, Virginia, with whom he was placed at twelve years of age. During the years 1767 and 1768 he was sent to Williamsburg to be educated, and, on his return, he acquired some knowledge of Greek, Latin, and French with the elements of mathematics. He afterwards studied law, and was admitted to the bar in the autumn of 1771. In 1772 he took the degree of A.B., to obtain which it was necessary to compose two essays, which occupied two years, and were read in the college. He was a member of the legislature till 1777, when he lost his election, in consequence, it is said, of his conscientious refusal to treat the freethinkers, according to the provision then prevailing. The legislature however re-elected him a member of the council, in which office he continued to sit four years, and then was appointed to the seat of a judge, which body he took his seat in the month of March.
MAD 263 MAD

Hamilton, with whom he was afterwards so closely united in forming the new constitution, and from whom he was so widely separated in carrying it into execution. It should be remarked that he did not offer the resolution which he had drawn up, on account of the jealousy even then entertained by state politicians towards the authority and those who had been in congress, and it was confined to a member who was exempt from that suspicion. While he was in the Virginia legislature he drew up the memorial and remonstrance against the project for a compulsory support of religion, which was printed with due view to a permanent establishment; and he succeeded in defeating it. (Tucker's Life of Jefferson, chap. 4.) His talents and acknowledged influence at this time were all exerted in favour of a policy as liberal as it was practical and was of the most conspicuous assistance to him. He was from Virginia, he furthered his purpose, instead of making a fruitless opposition to it. He opposed the attempt to introduce paper-money; he was the efficient supporter of the laws introduced into the code prepared by Jefferson, Wythe, and Pendleton; and he favoured the recovery of the debts due by the British creditors. He proposed liberal donations to General Washington and to Thomas Paine: the latter effort failed; the former succeeded: but the donation was refused. In correspondence at this time with some four or five friends with whom he was best of, he was the chief to keep a record of the debates, the only one extant which is either complete or authentic. He commonly wrote out at night what had been said in the day, in his own opinion in pamphlets. It was a practice, Alexander Hamilton and John Jay in recommending it to the American people in newspaper essays, under the signature of Publius, which have been since published under the title of 'The Federalist.' The debates, which he would have had to publish during his lifetime, congresses have lately purchased for 30,000 dollars, and they will soon be published.

After the federal constitution was submitted to the several States for their adoption, Mr. Madison went into the legislature of Virginia, and he and Patrick Henry headed the opposition to it; and it was to Mr. Madison's cool and powerful reasoning that its adoption in that state was mainly due. If it had failed there, it would have failed altogether. Mr. Madison had also more agency than any other individual in the treaty which divided the lands north-west of the Ohio (now comprising the states of Ohio, Indiana, and Illinois), to which he asserted a right, both under her regal charters and by manifesting the rights of Spain.

He was chosen a member of the first congress under the constitution in 1789, and continued a member of that body until 1797. In 1794 he married Mrs. Todd, a widow of Philadelphia, whose parents were Virginians, but, being Quakers, had removed to Philadelphia. From this time he felt the strongest inclination to retire from public life, and to devote himself exclusively to the cultivation of letters and science, and the pursuits of agriculture. But his countrymen appreciated his worth too highly to permit him to retire. He was one of the most noted men in Europe on one who had more weight personally; but soon finding that his views and those of Mr. Hamilton did not coincide as to the principles and spirit in which the federal government should be administered, he separated himself from the administration, in 1810, and continued to vote in Congress against the public debt was funded, he made an unaerial attempt to secure to the soldiers and other original creditors the benefits of the rise in value of the public claims, which speculators had purchased at about one-eighth of their value. In Congress he moved that the government which he opposed the ministerial policy of which Hamilton was the chief author. He also opposed the unqualified assumption of the state debts by the federal government. After the French revolution broke out, European politicians were divided as to the views of the United States, and he gave them their chief form and colour. Mr. Madison, who always inclined to the side of liberal principles, was a warm friend of the Revolution; and though its excesses were more uncongenial to one than to himself, characterised as he was through life by mildness of temper, humanity, and love of order, yet he considered it as likely in the end to advance the cause of civil freedom, and it therefore had his hearty wishes for its success.

Though thus leading an organized opposition to General Washington, this critic of his own party, and one who had thenceforth no further connection with his administration, time seemed to have no influence on their friendship, and it never produced positive alienation. Before his first term had expired, General Washington, being on retirement, conceived the purpose of a farewell address; and among the views of his views he required Mr. Madison to fill it up. Some years afterwards he greatly enlarged Mr. Madison's draft, which he then submitted to Messrs. Hamilton and Jay, and the document as published is found to contain some of Mr. Madison's original forms of expression. The correspondence of these two great men continued until 1798.

After it was known that General Washington would retire in March, 1797, parties prepared themselves for the struggle of electing his successor, the federalists uniting in support of Mr. Adams, and the republicans in favor of Mr. Jefferson. Mr. Adams succeeded by three votes. When parties were so nearly balanced, each redoubled its efforts for the ascendency. The administration party prepared two laws for removing dangers of the judicial and for publishing liberal laws of government (called by the Ministry Laws), which gave their adversaries a fit occasion to make a powerful appeal to the people. To further this object Mr. Madison, who was now withdrawn from congress, most publicly took up the subject of these orders, and in 1798 prepared resolutions denounced these acts of congress as infractions of the constitution, and inviting the concurrence of the other States. As some of the States opposed the doctrines, and the subject produced much heat in the following session, Madison prepared new resolutions, with a preamble, in which he examines the whole subject in one of the closest and profoundest pieces of reasoning which our language contains. It is thought to have contributed more than anything else to the separation of the states from the treaty with France. A Report has since become a textbook for politicians on constitutional law and the relative rights of the States and general government. When Mr. Jefferson was elected president, Mr. Madison was made his secretary of state, and from that time until his retirement his life is comprehended in the history of the United States. But the principal parts which he acted will be briefly noticed here.

His pen was put in requisition in maintaining the claim of the United States to the right of deposit at New Orleans, and in his memory, in defense of the treaty with France, and the true boundary of Louisiana; in corresponding with Mr. Rose and Mr. Jackson, ministers of Great Britain, on the subject of the attack on the Chesapeake; in drawing up the memorial to the President concerning the extension of trade, and the objections to that which was made; and in corresponding with the American ministers on the French decrees and British orders in council. Besides these official papers he wrote an Examination of the Dogmatics of National Law, asserted by Mr. Stephens, which is perhaps the most compact piece of logic that he ever produced, and the most satisfactory exposition of the relative rights of neutrals and belligerents that is extant.

In 1809 he succeeded Mr. Jefferson as president of the United States, having obtained 129 votes out of 176. General Pinckney, of South Carolina, his opponent, obtained 47 votes. In Virginia the State appeared at first nearly divided between him and Mr. Monroe, but a majority of the legislature declaring informally a preference for Mr. Madison, that popular choice was thought to have been determined.

It is known that after many fruitless efforts to induce Great Britain and France to respect neutral rights, war was declared against Great Britain during his administration, and that it continued to various successors in office. We know that Mr. Madison, being aware how unprepared the United States were for war, and anxious to preserve peace as long as it could be preserved consistently with the neutral rights of America, wished to postpone the declaration of war, but was urged into it by Mr. C. in his last days whose patience was exhausted. If this be so, had his counsels prevailed, the war would have been prevented, for he has often told the writer of this notice that the administration had afterwards indubitable evidence that the British ministry had decided on revoking the offensive order
Council, in which case the principal cause of war would have been removed.

After serving two terms Mr. Madison retired to private life, in March, 1817; and it may be questioned whether the eight years which he served as president were not his happiest. In 1821, when the Constitution of Virginia was submitted to revision, he consented to serve as a member of the convention, and no doubt contributed largely to soothe the irritation which the conflict of local interests created. He also set at as a visitor of the university of Virginia. [Jefferson.] Except in the discharge of these duties, he not only held no office after his retirement, but, we believe, never left his county after he quitied Washington. Although Mr. Madison lived to the age of eighty-five, he had a very delicate constitution, and was never enjoyed health. He died on the 28th of June, 1836. His physician said that he had two or three diseases, any one of which was commonly sufficient to shorten life.

Monticello, his patrimonial estate, is a large tract of good land in Orange County, from which there is a fine view of the Blue Ridge, about twenty miles distant. The house, a large brick building, with a Tuscan portico, was sufficient for himself and his father. He was much visited in his retirement by his character and former station attracted many visitors, and his almost juvenile spirits and delightful conversation, with the very pleasing manners of Mrs. Madison, often tempted his guests to protract their visits longer than they had intended. His visitors thus became a tax on his pockets, which, as he said, was seriously felt. It was such confidence in him that from time to time he sold portions of his land. Though he was incapable of giving an active superintendence to his farm, he managed it with great judgment and with tolerable success.

This person Mr. Madison was below the middle size; though his face was ordinarily homely, when he smiled it was so pleasing as to be almost handsome. His manner with strangers was reserved, which some regarded as pride, and others as coldness; but on further acquaintance these impressions were changed, and Mr. Madison, increasing his familiarity, was found to be naturally a very sweet one, and to have been brought under complete control. When excited, he seldom showed any stronger indication of anger than a slight flush on the cheek. As a husband Mr. Madison was without reproach. He never had a child. He was an excellent master, and though he might have relieved himself from debt, and secured an easy income, he could never be induced to sell his slaves except for their own accommodation (to be with their wives or husbands). The writer has sometimes been struck with the thought that if Mr. Madison had been born and lived all his life in his sick chamber, the black seeming to identify himself with his master as to plans of management, and giving his opinions as freely, though not offensively, as if conversing with his equal. Mr. Madison has more than once told the writer that he should never have been beyond the ordinary point of view if he had many years before emancipated his slaves. It was his deliberate conviction that the colonizing of the slaves in Africa was practicable. He endeavoured to keep aloof from party feelings, but regularly read the newspapers, and remembered their contents better than most people. Though he was cautious in expressing his sentiments, he could not forbear taking the liveliest interest in public concerns, especially in those of the general government. In which character he seems to a faithful and solicitous . He stood well with all parties, and was solicitous so as to stand, both from a sense of duty and a love of popularity. Of all the present public men Mr. Clay seemed to be his favourite. He felt great solicitude about the irritation of old sea, of which he seems to have in his view. The project of slavery, and remarked that Mr. Clay had been so successful in compromising great questions, he wished he could have done something on this; and then he added, perhaps all parties would join and make him president.

Mr. Madison was a man of judgment, and of quick and fresh perceptions; he was a man of humour; he abounded in anecdote, told his stories very well, and they had the advantage of being such as were never heard before, except perhaps from himself. But distrusting the truth of old sea, he would say, I have never had a boy for the common people. But such were his constitutional powers that to the last his house was one of the most pleasant to visit, and his society the most delightful that can be imagined. Yet more than half his time he suffered bodily pain, and sometimes very acute pain. He left pecuniary legacies to some nephews and nieces; 1500 dollars to the university of Virginia, about 3000 or 4000 to the Colonization Society, and the rest of his property, in value above 100,000 dollars, to Mrs. Madison. His writings will be reprinted. (See Letters of Madison, Vol. i., Papers relative to the Old Confederation and Constitution of Virginia, Letters to Jefferson. Monroe, Washington, &c., down to 1789; ii. Letters to the same and others during the Administration of Washington and Adams; View of the Policy of these Administrations: Conversations with Washington, &c.; iii. Letters to Foreign Ministers, Heads of Departments, Presidents, &c., showing the Policy of the Jefferson and Monroe Administrations; iv. Letters and Writings on Constitutional Subjects; v. Essays and Speeches on Foreign Political Questions, the Law of Nations, Natural History, &c.; and vi. Miscellaneous.)

MADEC, the second son of Owen Gwynedd, prince of Wales, is said by some authors to have discovered America before Columbus. The Welsh chronicles are to state, that Madoc, having been compelled by civil disturbances to leave his native country, set sail in 1170 with a small fleet, and directing his course westward, landed after some weeks on a continent which produced abundantly the necessaries of life, and the inhabitants of which differed greatly from those of Europe. After remaining in the country a long time he left there 120 persons, and returned to Wales, where he equipped a fleet of ten vessels, and set sail again, but was never afterwards heard of. Some of those who followed him, perhaps, landed on the coast of Virginia or Carolina, and support it by an account of the discovery of an Indian population in North America who spoke the Welsh language. If however there is any truth in the story, Madoc probably landed in a year that precedent than Virgina was discovered by English Settlers, and present State of Kentucky; with an Account of the Indian Nations within the United States, London, 1793, 8vo.; also Bertuch, '"Epheremel. Geographic. September, 1819. The above narrative of Madoc's voyage was reprinted in the second volume of" Voyages") is given in the 'History of Cambria, now called Wales, a part of the most famous Blythe of Brytaine, written in the British language, about 280 years past, by Casarad; translated into English by H. Lloyd, gent., corrected, augmented, and continued out of records and best approved authors, by David Powell, London, 1584, 4to. Owen's 'British Remains' (London, 1777, 8vo.; 1785, 15mo.) contains an 'Account of the Discovery of America by the Welsh 300 years before the voyage of Columbus,' written by Dr. James of the Berwick. Madoc was the name of a Welsh countryman Madoc as the discoverer of the New World with more warmth perhaps than good sense. But the Northmen are said to have discovered America some time before the date of Madoc's alleged voyage; and this fact is admitted by some historians to be no longer than that of the expedition of the Welsh prince.


MADOCK THOMAS. Of the personal history of Madoc little is known. He resided in the Middle Temple. He always writes from the Middle Temple. Thomas Maddox of London was called to the bar by that Society in 1704, and the son of a clergyman of Wales of the same name, in 1793. He first wrote on the Constitution and a remarkable Treatise on Antiquities of the Exchequer of the kings of England, in two periods: from the Norman Conquest to Henry VIII.; to which is prefixed a very learned dissertation on ancient charters and instruments. In 1759 he published a work on the History and Antiquities of the Exchequer of the kings of England, in two periods: from the Norman Conquest to the end of the reign of King John; and from the end of the reign of King John to the end of the reign of Edward I. He also published an able and ingenious essay on the antient dialogue concerning the Exchequer, generally ascribed to Gervaisius Tiburienensis; and a dissertation concerning the most antient great roll of the Exchequer, commonly styled the Roll of Quinto Regis Stephani. This work was highly praised, and his valuable addition of an index, in 1769, begins with a dedication to the queen, followed by a long preface explanatory to Lord Somers, in which the author says, 'The records which I here vouch were taken by my own pen from the
authentic membranes, unless where it appears by my references to be otherwise, and except haphazard in two or three instances, which it is not material to recollect; and in giving an account of the antient state of the Exchequer, I have for the most part as far as the subject matter would permit, to make use of such memorials as serve either to make known or to illustrate the antient laws and usages of this kingdom: for which reason the present work may be deemed not only a history of the Exchequer, but likewise a history of the antient law of England. This epistle concludes with a large digression concerning the Romanick dialect.

The "History of the Exchequer" treats of the court of the kings of England during the two periods comprised in it, its great officers, the justiciar and archbishop's council, its officers and business; of the exchequer of the Jews, showing the peculiar mode in which they were governed and protected as 'the king's villains' of the different sources of the royal revenue, fully considered in all its branches, may serve illustrating by a few figures to an immense mass of documents. The dialogue concerning the exchequer (which Mr. Madox ascribes to Richard Fitz-Nigel, bishop of London), treats, in the form of questions put to the author and his answers, of the functions of the different officers of the exchequer in the reigns of Henry II, and of some other miscellaneous matters, in the first book, and of the mode of collecting the king's revenue in the second. It is preceded by an epistolary dissertation addressed to Lord Halifax. The dissertation to which this address is a counterpart, but which the roll of the exchequer, commonly called the roll of Quinto Stephani, is addressed to Lord Somers. It has lately been ascertained by that eminent antiquarian the Rev. Joseph Hunter, that this roll ought to be referred to the 31 Hen. 1., and not, as it has been hitherto supposed, in obscurity in which this part of the reign of Stephen is involved. Though Madox doubted whether this roll belonged to the reign of Henry I, Stephen, or Henry II, yet in his table of the barons of the exchequer from the Conquest to the time of Edward I, all the names which are placed in the list in the time of Stephen are so placed upon the supposition that it relates to the 5th year of that king, at which time many of these barons were and long had been the adherents of the rival claimant of the throne, the empress Maud.

In 1726 Mr. Madox published his "Firma Burgi, or an Historical Essay concerning the cities, towns, and boroughs of England, taken from records." A posthumous work from the pen of Mr. Madox, in the year 1742, is entitled "The land-honors and baronies, and tenure in capite, verified by records, in which he corrects the errors into which Lord Coke and others have fallen in the use of these terms [MANOR], appeared in 1736, and, with merely an appendix, in 1756. It was reprinted in 1819.

Mr. Madox was indefatigable and successful in collecting his materials, and skillful in arranging them, but he has left it for others to apply them to the political and statistical history of the kingdom. A large body of documents, collected with 150 miles of written materials, with the exception of one handa stone street in the north-east quarter of the town, the whole is inhabited by natives. The street here mentioned contains the dwellings of Europeans, but the greater part of the English merchants are off the street, and live in the houses called garden-houses in the neighbourhood of the city. The government-house is a handsome building, adjoining the esplanade. The native population for the most part reside in streets placed to the north and east of the fort, from which they are separated by a row of buildings.

Fort St. George was taken in 1746 by a French force under M. de la Bourdonnais, who obtained permission for the purpose from Sree Rung Rayael. This fortress was soon surrounded by a town, which has since become very populous; the inhabitants in 1822 were ascertained to amount to 462,000. It was again attacked by the French under M. Lally in 1758, but after investing the fort for nine weeks they were obliged to raise the siege and retire with considerable loss. Madras has since been threatened with attacks by Hyder Ali in 1757, but has never been reduced.

Madras is 1360 miles from Calcutta, 756 from Bombay, 1158 from Agra, 1103 from Benares, 1275 from Delhi, 352 from Hyderabad, and 1661 from Lahore, all travelling distances.

MADRASRA. This name is given by De Blainville to a subsection of the Madrephyllia, including Aetra, Echinastrea, Ocullina, and Branchiastrea. It attacks but little importance to it as a division. [MADREPHYLLIGA.]

MADREPHYLLIGA, the first section of the Stony corals, is an appendage to the family of Zoantharia MADERMPOLA. The Linean genus Madrepora included nearly all the species, and obviously required analysis, the more so that geological naturalists referred to the same genus a vast number of the most unknown forms of the rudimentary and impeded fossil zoology, and prevented any right notion of the successive forms of spongothophyse on the skull.

Solender proposed some useful divisions of this usman unageable genus, derived from the great and the coral;
MAD

Lamarck established many important genera, especially characterising some fossil groups; Lamouroux also laboured to improve the classification. Of late years Goldfuss has described additional fossil groups; and M. de Blainville has reorganised the labours of his predecessors, with a special regard to the soft animal parts figured and described by L'Hoëst, Quoi, Gaimard, and other voyagers.

The Madrephyllina of this writer seldom require that highly ramose figure which belongs to the Lamarkian genera Madrepora, Polichopora, &c.; they are furnished with cells of various figure, always however radiated by lamellae, which are frequently numerous. There is no general distinctive character of the soft parts, or 'polypi,' as they have usually been termed.

**General.**

_Cyclolites_ (fossil).

Animal unknown; solidified by a calcareous _polyparium_, of a short, simple, orbicular, or elliptical figure, flattened, and marked with concentric lines below, convex above, with a great number of very fine entire lamellae, convergent to a subcircular centre.

Lamarck founded the genus; Goldfuss includes it with the Fungi. Only fossil species are known; they occur in the tertiary and upper secondary strata chiefly; Mr. Lonsdale notices it in the Silurian system.

**Example.** _Cyclolites numismalis_ (Madrepora porpita, Linn.). Goldfuss, tab. 14, fig. 4, a, b.

_Montlivaltia_ (fossil).

Animal unknown; solidified by a calcareous _polyparium_ of subconical or pyriform figure (fixed); transversely wrinkled below; enlarged, excavated, and lamellato-radial above. From the olive of Caen. Goldfuss refers it to Anthophyllina of Schwager; and Blainville says it is closely allied to Cyclolites.

**Example.** _Montlivaltia caryophyllina_. Lamx., 'Zooph.' t. 79, figs. 8-10.

_Fungia._

Animal gelatinous or membranous, generally simple, depressed, orbicular or oval; mouth superior, transverse in a large disk, which is covered by many thick cirrhoid tentacles: the disk is solidified internally by a calcareous solid _polyparium_, of a simple figure ( seldom complex), ornamented above by a star of radiating acutened lamellae, and below by simple rugose rays.

There are about nine recent (mostly from Indian Seas), and as many fossil species. Blainville arranges them in three groups: simple and circular; simple and compressed; complex and oblong.

The animal, according to Quoi and Gaimard, is very like that of Caryophyllina: it covers the upper face, and returns over the lower, so that the whole polypriram is internal. M. Stutchbury has described the growth of this coral in the "Linnean Transactions."

**Example.** Fungia patellaria. Ellis and Soland, t. 11, figs. 1-4.

_Polyphyllina._

Animals numerous, confluent, with a rather prominent mouth, lobed at the margin; numerous tentacles not round the mouth, but scattered on the surface of a flabby part, which entirely envelopes and encloses a calcareous solid _polyparium_. _Polyphyllina_ is a free, oval, elongated plate; above rather convex, and covered with lamellar ridges, which are denticulated, prominent, very slender, and transverse; but without stelliform disposition; below rather concave, and roughened by close-set tubercles.

The whole mass is free on the sea-bed.

**Example.** Fungia tuld of Lamarck. 'Actinologia,' pl. 30, fig. 1.

_Antophyllina._

Animal unknown, containing a calcareous _polyparium_ of a conical or pyriform figure, fixed in the lower part, enlarged, flattened, excavated, and multilamellous in the upper part. This genus includes fossil species from ancient rocks, and appears imperfectly distinguished from Tubulina, unless the species of that genus were all free, which is at least doubtful.

**Example.** Anthophyllina Guettardii, Drf. Note. Ehrenberg unites in one genus, Monomyces, the Antophyllina Montlivaltia, and the two first groups of Fungia.

_Turbinolia._

Animal simple, conical, ribbed externally with larger set smaller ribs; terminated above by a mouth begirt with numerous tentacles, and solidified by a calcareous _polyparium_.

Polyparium free, conical, furrowed externally, attenuating to one extremity, enlarged at the other, and ending in a large shallow radiated cell.

Most of the species are fossil; they occur in rocks of ages, particular species belonging to each; but if the genus is not very obscurely characterised, the use of the term is not very accurate. According to Blainville, the recent _T. amicorum_ has twenty-four ribs; but this number is exceeded vastly in some of the fossil species referred to the genus; and in others there are fewer than twenty-four.

_Diplocentrum_ of Goldfuss is a compressed turbinoila, according to Blainville.

**Example.** Turbinolia amicorum, Bl. South Seas.

_Turbinolopes_ (fossil).

Animal unknown, solidified by a calcareous _polyparium_ of a simple turbinate figure, and free. This _polyparium_ is laconous, furnished above with radiating lamellae, armed at short equal intervals, and marked externally by longitudinal flexuous striæ, inclosing between their united edges vertical lines of pores or cells.

M. Lamouroux describes this genus. It has been recently adopted by Mr. Lonsdale for specimens which occur plentifully in strata below the red-sandstones. ('Scholars System,' by Murchison.) De Blainville appears to think it should be reunited with Turbinolia, but he had not examined the specimens noticed by Lamouroux.

**Example.** Turbinolia ochracea, Lamouroux. 'Gen. des Polypt.,' t. 82.

_Caryophyllina._

Animals actiniform, subcylindrical, provided with a simple or double crown of short, thick, perforated tentacles, which project from the surface of stars or cylindriconal solid cells furnished with radiating lamellae internally complicated externally striated, and aggregated into a solid conical _polyparium_, fixed at the base. The species are grouped according to the simple or fasciculated character of the mass. There are both recent and fossil examples of each group.

Lamarck is the author of this genus, distinguishing it from Turbinolia and from Oculina: he has been followed by nearly all zoologists; but Goldfuss has reunited Caryophyllina and Oculina into his genus Lithothedon.
Example. Caryophyllia cyathus. Ellis and Sol., t. 28, f. 17.

Ehrenberg divides this genus, and forms the following new ones:

Desmophyllum. Example. C. dianthus.
Cyathina. C. cyathus.
Cladocora. C. calycularis.

Sarcinula.

Animals unknown, contained in cells at the end of long cylindrical tubes; cells lamelliform, stelliform; tubes united internally, parallel to the axis, united, by a cellular transverse mass into a solid calcareous polyparium, whose upper and under surfaces are plane and parallel.

This genus, established by Lamarck, includes both recent and fossil species. It seems to bear the same relation to Caryophyllia that certain tubular astraea bear to the ordinary forms of that genus. There is no sufficient reason for the conjecture of De Blainville, that 'lithostrotion' of Llwyd should be referred to this genus; it has more resemblance to the following group, with which indeed De Blainville has joined it.

Colummarius (fossil).

Animals unknown, contained in shallow, multi-radiate, stelliform cells, at the ends of prismatic tubes; tubes aggregated, contiguous, more or less parallel, forming by their union a solid, thick, calcareous polyparium.

This is a genus of Goldfuss; established on fossils of the 'transitional' strata.

Stylina (fossil).

Animals entirely unknown, contained in radiated cells at the end of long cylindrical vertical tubes; tubes furnished internally with distinct lamella, which radiate from a solid more or less prominent axis, and are united by a cellular mass so as to form a stony polyparium, more or less extended, thick, and calcified above.

A genus of Lamarck, originally named Fascicularia by him, which includes perhaps only one species. The prominent axis occurs however in several madreporic fossils not usually referred to this genus—as certain Cyathophylla of Goldfuss. Sarcinula conodes of this author is ranked by Blainville as a Stylina.

Catenipora (fossil).

Animals unknown, contained in tubular cells; cells terminal, often oval, furnished with radiating plates, and united laterally into a calcareous polyparium, which may be described as of a conical figure, fixed, composed of vertical anastomosed lamellae.

Tubiporae catenulata of old writers is the type of this Lamarckian genus, which, with some surprise, we found to be, as Blainville states, really a lamelliferous coral. He draws this inference from examining a fine specimen, at Bonn, of Catenipora escharoides, which he considers the species. It is peculiar to the 'transition' rocks, though not perhaps, to the 'silurian system.'


Fischer's genus Halysites is identical with Catenipora.

Syringopora (fossil).

Animals unknown, contained in long, subflexuous, tubular, vertical cells; opening of the cells round, terminal; numerous small horizontal tubuli branch off from the cells, and unite, by anastomosis, the whole ramified mass into one polyparium.

Goldfuss is the author of this genus, the species of which were, by older writers, always ranked as Tubipora. In our own examinations of Syringopora from the carboniferous limestone (S. ramulosa? Goldfuss), we have had reason to think the interior of the tubes had formerly been radiated, but the traces of the lamellae are never clear, or even certain. The species belong to Silurian and carboniferous rocks chiefly, perhaps not exclusively.

Syringopora geniculata.


Dendrophyllina.

Animals actiniform, furnished with a great number of bifid tentacula, in the midst of which is a polygonal mouth: the cells containing the animals are rather deep, and radiated by numerous prominent lamellae; the polyparium which these compose is widely attached, arboreal, striated externally, lacunose internally, and truncate at the extremities. The species are both recent and fossil.

Example. Dendrophyllina ramea. Sol. and Ellis, t. 38.

Lobophyllia.

Animals actiniform, furnished with many cylindrical tentacula; cells conical (sometimes elongated or sinuous),
with a subocular opening, lacinato-lamelliferous, terminating the few branches of the polyparium, which is fixed, of a turbinated shape, externally striated, and internally lacunose.

The species were included in Lamarck's genus Caryophylla: the fossil species are chiefly from the oolitic formations.

Example. Lobophyllia carduus. (Caryophyllia carduus, Lamarck.)

Meandrina.

Animals more or less confluent, in one surface, in long sinuous series, having each a distinct mouth and lateral series of very short tentacula, contained in shallow cells, which are not really separate, but form by their lateral union sinuous valleys; these valleys are furnished on each side of the mesial line with transverse subparallel lamellae, ending against ridges which separate the valleys; the whole calcareous polyparium is fixed, simple, turbiniform when young, and globular when old.

This genus, established by Lamarck, is universally adopted by zoophysiologists. The recent species belong to the Indian or South Atlantic Seas. The fossil species are few, and chiefly belong to the oolitic formation.

Example. Meandrina dadales. (Ellis and Sol., t. 46, f. 1.)

Dicthyophylla (fossil).

Animals unknown, contained in polygonal, rather irregular cells of a considerable size; cells separated by partitions denticulated on both sides; the calcareous polyparium which results is fixed, deeply reticulated on the surface, and encrusts other bodies. (The base of the cells is finely tuberculized.)

The best marked species (D. reticulata) is found in the chalk of Maasstricht. Goldfuss, t. 21, fig. 3.

Agarica.

Animals wholly unknown, contained in cells, which often appear incomplete or confluent, and sublamellar internally: they constitute by their union a stony polyparium, fixed, formed of flattened foliaceous irregular expansions, stelliferous on one side only.

The recent species are not numerous; we receive them from the Indian Ocean and South Sea. Goldfuss refers some fossils to this genus.

Example. Agarica cucullata. (Ellis and Sol., t. 42 f. 1.)

Tridacophylla.

Animals actiniform, confluent, very depressed, enlarged, and attenuated to a finely crenulated edge; mouth central, a little tuberculous, but without tentacula; cells deep, irregular, foliaceous in the borders, lamellato-radiate, and denticulate within, externally and irregularly striated; the polyspheric mass thus formed is calcareous, foliaceous, not porous, striated, turbinated and fixed at the narrow part.

Lamarck included the principal species (T. luctuus) in his genus Pavonia; another he named Explanaria aspera.

Example. Tridacophylla luctuus. Ellis and Sol., t. 44.

Monticularia.

Animals unknown, contained in cells imperfectly circumscribed, sometimes even confused or confluent; the lamellae of these cells are very prominent, very distinct, rather numerous, and diverge from a tubercle; the union of the cells is marginal and in one surface; the polyparium is calcareous, very lacunose and polymorphous: sometimes it encrusts other bodies, is agglomerated into a heap, or spreads in sinuous expansions, striated externally.

This genus of Lamarck is supposed to be identical with Hydnopora of Fischer. The recent species are from the Indian Seas. Mr. Lonsdale refers a fossil species of the Silurian system to this genus.

Example. Monticularia exesa. Ellis and Sol., t. 43, f. 3.

Pavonia.

Animals without tentacula; the cells which contain them confluent, conical, small, rather oblique, furnished with many very close lamellae disposed irregularly, though sometimes in series; the polyparium thus composed is solid, fixed, running into various agglomerations and expansions, with sharp edges.

The recent species are from the East and West Indian Seas. The few fossil species are from transition and oolitic formations.

Example. Pavonia boletiformis. Ellis and Sol., t. 37, f. 3. 4.

The following genera, viz.: Astraea, Echinastera, Orina, and Branchastera, are grouped by De Blainville under the subsectional title of MADASTRENS.---

Astraea.

Animals short, more or less cylindrical; mouth rounded placed in the midst of a disk covered with few and rather short tentacula; cells shallow, lamellae radiating, and forming by their union a fixed polymorphous polyparium, which often encrusts other bodies, or is agglomerated on itself.

This great genus is divided into sections.

Section A. Astraeides of Quoi and Gaimard.—Stars round and often disjoined.

Example. Astraea calycularis (Caryophyllia calypus, of Lamarck). Mediterranean.

Section B. Meandriniform Astraea.—Stars distinct, unequal, oblong, more or less flat, forming encrusting or agglomerated masses.

Example. Astraea uva.

Section C. Gemmastrea.—Stars circular, very distantly prominent, and forming encrusting masses. (These are chiefly fossil.)

Example. Astraea Lucisciana, Depr., from the oolite of Besançon.

Section D. Tubastera.—Cells tubular, vertical, more or less distant, with a round opening, the edges being hardly prominent, and radiated by a moderate number (13 to 84) of complete lamellae. This section includes many recent and fossil species.

Example. Astraea farolata. Ellis and Sol., t. 43.

(The animal is described by Quoi and Gaimard.)

Section E.—Cells roundish, approximatus, sometimes irregular, rather shallow; the lamellae very distict, cutting complete, extended over the rounded interstices; mass encrusting or agglomerated.
Astram annans.

**Example.** Astraea annans. Ellis and Sol., t. 47.

**Section F. Siderastraea.** Cells superficial or shallow, undefined, with numerous very fine lamellae, radiating from an excavated centre, and continued to meet or even to join those of neighbouring cells.

**Example.** Astraea siderae. Ellis and Sol., t. 49.

The fossil species are numerous, especially in the later secondary and tertiary rocks.

Blainville makes several groups of them according to the manner of their growth.

**Section G. Dipastraea.** Of a globular figure; cells profuse, infundibuliform, subpolygonal, contiguous, with common partitions, which are elevated, sulcated, and echinulated on the edges.

**Example.** Astraea dipsaceae, Lamarch; Madrepora favosa, Ellis and Sol., t. 56.

There are fossil species in the secondary and tertiary strata.

**Section H. Montastraea.** In thick masses composed of tubular cells, which acquire a polygonal figure from juxtaposition; their edges not prominent; the cavity not deep, furnished with numerous lamellae united to a solid prominent axis. The known species are fossil.

**Section I. Panastraea.** In a thick mass composed of large polygonal excavated cells, pluriradiate, depressed in the centre, and hollowed towards the margin. (Accertularia of Schweigger; Cyathophyllum of Goldfuss.)

Goldfuss's generic name is much employed for fossils of the Silurian rocks.

**Example.** Recent, Astraea magna. Indian Sea. Fossil, Astraea Baltica, Bl. (A. annans, Lam.)

(Mr. Lonsdale has proposed a new genus, allied to Cyathophyllum; and from its vesicular internal structure calls it Cyathopyllum. From Silurian rocks.)

**Section K. Strombodes.** In corticiform masses composed of infundibuliform, polygonal, radiato-lamelliferous cells, which are prolific, or succeed one another vertically. Goldfuss calls the group Strombodes. Its distinctness is doubted by Blainville.

**Example.** Strombodes pentagonus, Goldfuss. Fossil, in the North American limestone.

**Section L. Cellastraea.** The species of this group differ from the Dipastraea principally by the fineness of their radiating lamellae, and by a peculiar cellular structure. The fossil species are found in tertiary strata.

**Example.** Astraea incerta. Sol. and Ellis, t. 47, 3.

In concluding his examination of the great genus Astraea (which includes several other genera adopted by Goldfuss, Schweigger, &c.), De Blainville acknowledges the probable perfection of the arrangement given, and notices the transitions which it presents to the generic groups of Caryophyllia, Pavonia, Oculina, &c. Perhaps until the relation of the lamelliferous cells to their contained polypi is known from a very general investigation of recent types, zoologists will do wisely not to propose new genera from ill-understood specimens of ancient corals.

**Echinastrea.**

Animals unknown, contained in raised cells which are strongly radiated, rather irregular, echinulated, and occupy only the upper surface of the coral. The mass is either free or expanded into a lobate or reflexed plate, intercellarly echinulated, but not porous externally.

(Part of Explanaria, Lam., is included in this new group, as well as Echinophora of that author.)

**Example.** E. ringens, Lam.

**Oculina.**

Animals unknown, contained in regular, round, radiated cells, more or less prominent, and scattered on the surface of a solid, compact, arborescent, fixed polypariurn.

Lamarck established the genus; Schweigger has united it to Astraea, and Goldfuss to Caryophyllia.)

**Oculina axillaris.**

**Example.** Oculina axillaris. Ellis and Sol., t. 13, f. 5.

**Branchastraea.**

Animals unknown; the cells which contained them are of a cylindrical figure, channelled internally, prominent, radiating from the general mass, and united into a ramose, cylindrical, solid coral. Only one species. _B. limbata, Goldfuss_, t. 8, f. 7; from the Jura limestone, Suabia.

**Madreporea**, the second section of the Stony Zoantharia of De Blainville, and placed by him after Madrepophylica.

The Corals of this section are generally arborescent, with small partially lamelliferous cells, and constantly porous in the interstices and walls of the cells. This last is the most important character. The Lamarckian genus Madrepora included many of the genera of De Blainville.

**Genera.**

**Dentipora.**

Animals unknown; cells deep, circular, mammillated, furnished with ten dentiform lamellae prominent towards the margin, scattered in the polythurium, which is compact, expanded, its parts anastomosing together, and echinulated with strong interstitial tubercles.

The species are ranked with Oculina by Ehrenberg and earlier authors.

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The species are ranked with Oculina by Ehrenberg and earlier authors.
Example. Dentipora virginea. Ellis and Sol., t. 36.

Astræopora.

Animals unknown (probably provided with a single crown of 12 tentacula): the cells which contained them are prominent, mammillarly, internally sulcated, and irregularly scattered on the surface of the polyparium. Polyparium extremely porous and echinulated, enlarged into thin expansions.

Example. Astræa myriopithalma of Lamarck.

Sideropora.

Animals unknown; cells deep, immersed, circular or subhexagonal, with six deep notches at the border, and a prominent central axis, irregularly dispersed on the areolorescent, palinated, finely granulated, but not porous polyparium. (Several of Lamarck’s Porites are placed in this group.)

Example. Sideropora digitata. In the Leyden Museum.

Stylopora.

Animals unknown; cells with few lobes at the circumference, internally striated, with a piattiform axis, irregularly aggregated into an areolorescent or subpalmated fixed polyparium, whose interstices are porous and echinulated. (This group of Schweigger is not considered as really generic.)

Coscinopora.

Animals unknown; cells infundibuliform, quinuncial, forming the openings of capillary tubes laterally adherent into an attached, polymorphous polyparium.

(This group, established by Goldfuss, is ranked by that author near to Retepora. There is apparently no evidence that it should be placed among the Madreporæ.)

Example. Coscinopora infundibuliformis. Goldf., pl. 9, and pl. 30, f. 10.

Gemmipora.

Animals without tentacula: cells deep, cylindrical, channelled, and almost lamelliferous within, prominent in a mammillar form on the surface of a fixed, porous, areolorescent, or laminiform polyparium. (Several of Lamarck’s Explanarian come into this group.)

Example. G. mesenterina. Ellis and Sol., t. 43.

Montipora.

Animals actiniform, short, provided with small tentacula, to the number of twelve, placed in a single series; cells very small, rounded, impressed, regular, with few internal grooves. Polyparium encrusting or agglomerated, very porous, much echinulated, and marked by mammillar prominences on the free surface. (Some of Lamarck’s Porites are included in this genus.)


Madrepora.

Animals actiniform, rather short, with twelve simple tentacula; cells deep, prominent, scarcely stelliferous, irregularly scattered on the surface, and accumulated towards the terminations of the polyparium, which is very porous, areolorescent or frondescent, and fixed. (This restricted genus includes several recent species, and a few fossils.)

Example. Madrepora abrotanoides, diminished. a. Termination of one of the branches, nat. size.


Palmopora.

Animals unknown; cells very small, unequal, complete; immersed, obliquely radiated, scattered: polyparium fixed, cellular within, very finely porous and reticulated externally, expanded in a palmate or digitated form. (This genus includes Millepora alcicornis of Linn. and others like it.)

Example. Millepora alcicornis. Linn.

Heliopora.

Animals short and cylindrical, with a crown of 15 or 16 broad and short tentacula; cells cylindrical, vertical or subdivergent, immersed, internally crenulated by parallel lamellae; polyparium largely porous in the interval of the cells.

2. Cells radiation polygonal, filamentous unequal, incompletely separated by granular interstices near the base of attachment. The polyparium is not porous.

Porites clavaria, Lamck. Recent, in the Indian Sea.

Madreporite.—Anthraconeite; Columnar Carbonate of Lime.—Occurs in roundish masses, the structure of which is columnar and diverging. Fracture industrious lamellar. Hardness 3°; yields easily to the knife. Colour greyish-black. Lustre vitreous.Opaque, or only translucent on the edges. Specific gravity 2·7. It is found in Norway at Stavern, in transition rocks; at Gypytta in alum slate; in Greenland, and in Salzburg.

Analysis by Klaproth:—

| Carbonate of Lime | 93° |
| Carbonate of Magnesia | 10·30 |
| Carbonate of Iron | 1·25 |
| Silica | 4·50 |
| Carbon | 0·30 |

99·55

Madrid, the capital of New Castile and of Spain, and now also the province of Madrid, stands on a range of small hills rising in the middle of the extensive plain of New Castile, which is bounded on the north by the mountains of Guadarrama, and on the south by those of Toledo, in 40° 24' N. lat., and 3° 42' W. long. of Greenwich. Madrid is supposed to occupy the site of the Mantua Carpentorium of the Romans, which was called Majoritum by the Goths, whereas its present name Madrid is derived. Some antiquaries contend that it was so called by the Spanish Arabs, in whose language the word Majorit meant a 'well-aired house.'

During the occupation of the peninsula by the Arabs the place served as a frontier town, and its castle was often taken from the Arabs and retaken by them until 1086, when it was finally taken by Alphonso VI, the conqueror of Toledo, who annexed it to the bishops of Toledo, to which it now belongs. It continued to be a mere village until the reign of Henry III of Castile, who, being passionately fond of hunting the wild boar and the bear, both which animals were then abundant in the mountains near Madrid, made the place his residence during the hunting season. Charles V. occasionally lived in it, and it was at last made the capital of the Spanish dominions by his son Philip II, in opposition to the opinion of his ministers, who strongly advised him to fix his court at Lisbon.

Madrid is more than 2000 English feet above the level of the sea, a circumstance which accounts for the coldness of its winters. In summer the heat is excessive, in some measure owing to the want of trees in the neighbourhood. The thermometer in 1837 rose to 117° of Fahrenheit in the open air. In winter the same thermometer sometimes descends as low as 18°.

Madrid is on the left bank of the Manzanares, a small rivulet which has its rise in the mountains of Guadarrama, about 36 miles from the capital, and which, after flowing under the walls of Madrid, joins the Xarama, a considerable stream, at some distance from the capital. Two majestic bridges, called Puente de Toledo and Puente de Segovia, are thrown over the Manzanares; but such is the contrast between the imposing grandeur of these bridges and the scanty stream which flows beneath them, that it has given rise to the witty saying 'that the kings of Spain ought to sell the bridges, and
Madrid is surrounded by a brick wall twenty feet high, which contains fifteen gates, mostly built of coarse granite. Among these the gate of Alcalá, and that of San Vicente, built in the reign of Charles III., and that of Toledo, the sign of Atocha, are characterised by purity of design and solidity of structure. During the present civil war, some slight fortifications have been erected on the principal points leading to the city.

The general aspect of Madrid from all the approaches is agreeable. The picturesque stuccoed facades of churches and convents, the tiled roofs of the houses, the fertility of the neighbourhood, and the total absence of good public buildings, or other buildings which indicate the approach to a great city, give to the capital of Spain the most delightful and pleasing aspect.

The interior however is not devoid of beauty. The wide and well-paved streets, the extensive and well-planted public promenades in and near the city, with the fountains in many of the squares, the gorged churches, and carreteras de la ciudad, remind the traveller that he is in the capital of Philip II. The houses are well constructed: the foundations and some of the ornamental parts are of granite, and the rest of red brick, stuccoed and generally painted. In Picco, I. of the Exchange, and in some other places built in the sixteenth century, and contains, as in Paris, several families. The principal streets, with few exceptions, are moderately wide and handsome: that of Alcalá, for instance, is wider than Portland-place in London, and contains many splendid buildings. The Palacio de Buenavista, de Atocha, &c., would be ornaments to any capital; the rest of the streets are generally narrow and crooked. There are 49 squares, of which the principal are—of the Royal Palace; that of Santa Catalina, where a beautiful bronze equestrian statue of Charles II. was erected; the Puerta del Sol, where the five principal streets of Madrid meet, and which is a place of resort both for the idle and the busy, being the spot where, owing to the proximity of the Exchange, or bourse, all commercial transactions are conducted; the Plaza de la Española, where criminals were formerly executed; and lastly, the Plaza Mayor, which is the finest of all. This square is now used as the rallying point for the garrison of Madrid in case of alarm, on account of the strength and solidity of the buildings and the difficulty of approaching it through the narrow crooked streets. Its form is quadrilateral, 434 feet by 334, and it is surrounded with stone buildings six stories high, ornamented with pillars of grey granite, which form a fine prospect from the central tower.

The population of Madrid, as to which no official returns have been published since 1807, was stated by Múñano to be 201,344 in 1826, but this number is generally supposed to be too great for that time, although it may at present be nearly the same. The capital of Madrid is not above five miles; and there are no suburbs.

The royal palace of Madrid, though unfinished, is one of the finest royal residences in Europe. The interior is decorated in a style of costliness and magnificence. It stands on the site of an old Alcázar, or palace, inhabited by Philip II., which was burnt to the ground in 1734. Philip V. began the building, which was continued by his successors. It has four fronts, 470 feet in length, and 100 feet high. The central square, the anteroom, and the building, wherein Madrid is chiefly indebted for its embellishments: the Casa de Correos (Post-office) in the Puerta del Sol; the palace called de Buena Vista, formerly belonging to the dukes of Alba, now converted into an art gallery museum; the royal palace of the court of Castile, the palace of the first Duke of Berwick, are among the public and private buildings which adorn the capital. Among the numerous churches and convents which fill the streets of Madrid, scarcely one can be mentioned as a specimen of a pure style of architecture. That of San Isidro, formerly belonging to the Jesuits, has a very fine portal; the convent of the Serafins, founded by Ferdinand VI. and his wife Barbara, is likewise a fine building, and the interior of the church is ornamented with the richest marbles. The convent of San Francisco el Grande, the last seat of the Inquisition in Spain, and the most perfect example of the severity and correctness of the design, its beautiful proportions, and a dome built in imitation of that of Saint Peter's at Rome.

There are 67 churches in Madrid, exclusive of private chapels. Before the year 1834 there were 66 convents, 34 for men and 32 for women. Some of them have been recently pulled down, either to make squares; others have been converted into barracks, hospitals, magazines, and government offices.

Public promenades abound in Madrid. That which is most resorted to is the Prado, which consists of various open spaces surrounded by a colonnade of trees, and ornamented with beautiful marble fountains. Adjoining to it is the Retiro, an extensive and beautiful garden. The garden suffered greatly, both from friends and foes, during the Peninsular war, but has been reconstructed by the new administration of Monseigneur Damas.

Another favourite promenade is a vast plantation outside the gate of Atocha, called las Delicias, leading to a canal known by the name of Canal de Manzanares. This canal, which extends only a short distance from Madrid, was lately built in the vicinity of the river Tajo at Toledo, by means of the Yara.

The literary and scientific establishments are generally of old date and insufficient to meet the wants of the present day. There are two extensive libraries open to the public: one founded by Philip V. in 1712, which contains 136,000 volumes, besides 2,000,000 leaves of transactions, periodicals, and newspapers, which have been described by J. Iriarte, and a museum of medals and antiquities. The library of San Isidro, belonging formerly to the Jesuits. Both have been considerably increased of late by the addition of the libraries of the societies of history, of the popular science, and the academies: 1. La Academia de la Lengua, founded in 1724, in imitation of the Académie Française, confines its labours to the publication of works in the Spanish language, such as grammars and dictionaries, and to editions of the best Spanish authors; 2. the Academy of History originated in a society of individuals whose first object was the preservation of historical records. It was confirmed by Philip V. who, in 1738, granted the present charter to this society, which is the most extensive, and in which the Turkish and Moorish libraries, the Royal Library in the Calle de Atocha, are the most useful than those of its sister institution; and the nine volumes in quarto already published by them form a valuable addition to the history of Spain. 3. the Academy of the Fine Arts, instituted in 1738, holds weekly meetings in the street of the Cera, where a few books are done little or nothing; lastly, the Academy of Medicine. A fine botanical garden, well stocked with exotic plants, forms a delightful spot in the spring, when it is much frequented, attached to the establishment are various professors, who are more or less devoted to the study of medical science. The Museum of Natural History in the Calle de Atocha is not worthy of the praise bestowed upon it by travellers: it certainly contains a splendid collection of minerals from the Spanish dominions in America, but they are badly arranged and neglected. The most interesting skeleton of the Megatherium described by Cuvier.

Along the east side of the Prado is the National Gallery, a noble building of colossal dimensions, with a beautiful Tuscan portico and Doric colonnades. The collection of paintings which it contains has been recently pronounced by competent judges to possess a greater number of good pictures with fewer bad ones than any other gallery in Europe. The Armoury, a fine building of the time of Philip II. containing some fine specimens of Charles I. and Charles II. of France, especially of the Cinque Cento, or the fine times of Benvenuto Cellini. There are several complete suits of armour, which formerly belonged to Ferdinand V., Charles V., the Great Captain, John of Austria, Garcia de Paredes, amongst others. The palace, although situated in the very centre of the town, is far from being noisy, and all perhaps is a cost of mail with the name and the arms of Isabella upon it, which she is said to have worn in her campaigns against the Moors. An account of this collection, with drawings of the best pieces of armour, is now in course of publication.

Madrid has two small theatres, *La Cruz* and *Príncipe*, both managed by the Ayuntamiento, or municipal corpora-

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The inhabitants of Madrid repair, every Monday during the season, to a vast amphitheatre outside of the gate of Alcalá, where the favourite spectacle of bull-fights is exhibited.

The police of Madrid is not good. The streets are generally dirty, and the approaches to the city sometimes blocked up by heaps of rubbish. The city has no common sewers. Notwithstanding the great number of fountains, the drinking water is often foul. Madrid has undergone great changes since the fire of 1868, and the city itself is considered to be extremely unhealthy; and if Philip II. chose it for his residence on account of the purity of the air and the quality of its waters, as we are told, Madrid now has not the advantage in either of these points.

The sharp winds which blow from the Guadarrama mountains in winter produce the endemic pneumonia or pulmonary asthma, which often proves fatal in a few hours. A sort of colic, caused by the dryness of the atmosphere, is likewise prevalent in summer.

Charitable and benevolent institutions are numerous, and some are amply provided with funds; but the management having always been in the hands of the clergy, the funds have been spent in building monasteries and churches, rather than applied to the charitable purposes intended by the donors. An institution, supported by voluntary contributions and patronised by the government, has recently been established outside of the city, for the reception of lepers, who were formerly objects of horror and disgust in the place. Cook's—

There is no mention of Madrid in the text provided.
Augustus from his purpose of restoring the antient Roman constitution, which Augustus however could never have seriously attempted. October, 38; Seneca, De Brev. Vit. 5.)

Maccenas was held in the highest honour by Augustus, although during the latter part of his life he appears to have been for a short time in disgrace with the emperor, principally owing to the intrigues of his wife Terentia (Tac., Ann. iii. 36; Dio, liv. 19. 7.), but he was probably restored into favour again before his death, which happened A.C. 8, four years after that of Agrippa. Maccenas enjoyed with Agrippa the full confidence of Augustus, and his death was occasioned, according to Augustus, by an irremediable disease. (Sen., De Benef., vi. 32.)

If we may believe a tale related by Dion, he sometimes rebuked the emperor with the utmost freedom (iv. 7).

Maccenas was a great patron of literature; and it was peculiarly owing to his assiduity and support that Virgil and Horace were raised from a state of poverty and indigence, and enabled to devote themselves to poetry. They were both admitted to his friendship, and Horace in particular appears to have lived on terms of the greatest intimacy with him.

The health of Maccenas was not good (Pliny, H. N., vi. 59), and was probably injured by his luxurious and voluptuous habits. (Sen., Epist. 190; Juvi. xvi. 39; Petron., 81; Dio, liv. 39; Tac., Ann. i. 54; Plutarch, Erotes, c. 16.) He was in a later part of his life a frequent visitor at the house of Agrippina, from which Nero is said to have witnessed the burning of Rome. (Suet., Nero, c. 38; Sen., Epist. 114.)

Maccenas wrote several works, none of which have come down to us. Their loss however is not much to be deplored, since the testimony of Pliny is that antient authors were written in a very artificial and affected manner. (Suet., Octav., c. 86; Sen., Epist. 114; Tac., Dial. de Orat., c. 25, who speaks of the calamitatem Maccenetiae.) They consisted of poems, tragedies, (one entitled 'Prometheus, and another 'Octavia'), a history of the wars of Augustus (Hor., Carm. ii. 12, 9), and a symposium, in which Virgil and Horace were introduced. (Servius on Virg. Am., viii. 310.)

The few fragments which remain of these works have been published by order of the 'Maccenatiana, sive de C. Cilini Maccenatis Vita et Moribus,' Göttingen, 1824.

There is a curious passage in the 'Saturnalia' of Macrobius (ii. 4), in which he gives an extract of a letter from Augustus to Maccenas, in which the emperor ridicules the style of his friend: 'Vale, mel gentium, melicule, eburb ex Etruria, labor notorum (lacer?) Aretinum, adamas superans, Tiberinum magnatum, Caesaren spiralunt, jaspi figurorum, berylle Porceni, carbunculorum habentes, &c. &c. &c.'

MELSTROM. [TRANSLATION.]

MEN, or MENGRA, or MENURA, Dr. Shaw's and Dr. Latham's name for a singular genus of birds, whose place in the system has occasioned some difference of opinion among ornithologists.

In 'An Account of the English Colony of New South Wales, from its first settlement in January, 1788, to August, 1901, &c. &c., to which are added some particulars of New Zealand, compiled by permission from the MSS. of Lieut.-Governor King; and an Account of a Voyage Captained by Mr. Bass, &c. &c., abstracted from the Journal of Mr. Bass, by Lieut. Collins of the Royal Marines,' (4to. 2 vols., 1803, London), it appears that in January 1799 a numerous detachment of seamen under a certain Irishman went out for the discovery of a settlement for themselves, the governor, after incautiously trying corporal punishment, determined, with a view of checking the spirit of emigration, to convince these Irish by their own experience and difficulties, accordingly he caused four of the strongest and hardest among them to be chosen by themselves, and properly prepared for a journey of discovery. They were to be accompanied by three men upon whom the governor knew he could depend who were to be informed and exhorted to follow the example set off from Paramatta. On the 24th the six men returned, having left the foot of the first mountains, were so completely sick of the journey, and of the prospect before them, that they requested to return with the soldiers, whose mission hence terminated. The three persons who had been sent out with the Irishman returned on the 9th of February, they came by land, and by sea, in the course of the year 1799, 1800, and 1801, and by sea only in the year 1802, to Paramatta, and brought with them parts of the country.

Mr. Vigers (Linn. Trans., vol. xiv., who alludes to the position assigned to the bird by the authors above noticed, places it at the extreme of his third order among the birds of its family of Otididea, for reasons the works of which I have not been able to obtain.) stands in a former volume. (Cassius, vol. p. 126.)

M. Lebon speaks of the position of the Menura on from being fixed, and though he follows Cuvier in placing it among the Passerines, he observes that some differences have been made in the classification of the order which is derived from the Gallicanina. After quoting the works of Cuvier given above, he says, 'The Menura has therefore been sometimes arranged among the gallinaceous birds under the
name of the Lyre-Pheasant or Pheasant of the Woods, and sometimes at the end of the Calaos [Hornbill, vol. xii.] and the Hoazins [Cracidae, vol. viii., p. 132], as M. Vicellot classed it, while, scientifically speaking, it is near the Thrushes that Memura ought to take its place, though it differs distinctly from them in the form of the body.

Mr. Swainson ('Classification of Birds,' vol. ii., 1837) alludes to the place assigned to Memura and Megapodidae by Mr. Vigors, and says that they certainly accord more with that family than with any other group of the Gallinaceae. Mr. Swainson observes that both these genera have the feet uncommonly long, and that both seem to represent the scapular genus Orthonyx, a bird indeed scarcely larger than a sparrow, but agreeing in the very remarkable scapular character of having the three fore toes of nearly the same length.

If, then, as we believe, is the scapular family of the Rasure, this singular analogy is precisely what we should expect in two groups representing the same tribes. In the synopsis at the end of the volume Mr. Swainson combines the terms Cracidae and squamata in its place of the family 'Megapodinae' (Megapodidae?), remarking, that 'as he has every reason to believe, from an attentive study of this family, that Crac is an aberrant genus, he has thought it better to correct his former error, and to name the whole from that group which is one of the chief types; and by so doing, the first genus of his 'Family Megapodinae, Grootvoet,' with the following

Generic Character.—Bill moderate, depressed at the base, straight, the tip obliquely notched. Nostrils naked and placed near the middle of the bill. Feet very large, strong, and robust; nearly all the anterior toes equal; the claws enormous for the size of the bird, obtuse, and slightly curved. Wings short. Tail very long, lyre-shaped; the feathers singularly developed. The typical or conformal form of the whole animal.

Example, Memura superba, Menura Lyra or Lyreata, Menura Nower Hollandia, Shaw, Lath., Memura para- dusa, Vieill., the only species known.

Description.—Lieutenant Collins, in the work above quoted, gives, towards the end of his second volume, a more minute and ornithological description (with which he had been 'favored') than that stated above. The second description is as follows: 'The bill of this bird, which has been named Memura superba, is straight, having the nostrils in the centre of the beak. The base of the upper mandible is furnished with hairs like feathers turning down; the upper mandible is at the base, somewhat like that of the pigeon. The eye is a dark hazel, with a bare space round it. The throat and chin are of a dark rufous colour; the rest, with the body, of a dusky grey. The feathers on the rump are longer than those of the body, and more divided. The colour of the wings, which are concave, is dark rufous. The legs and claws are large in proportion to the bird, particularly the claws. The outward toe is connected with the middle one as far as the first joint. The tail is long, and composed of three different sorts of feathers, of which the upper side is of a dark grey, with ferruginous spots. The first two lower feathers, which are a little curved in the mouth of a pearly colour, enriched with several crescent-shaped spaces, of a rich rufous and black colour. The laminae are unwedded, turned round toward the extremity, and ornamented with a black bar, the breadth of an inch, and fringed at the end. The back is likewise long, is fringed with long hair-like filaments; and the third, which is also long and curved, is plucked on the inner side only, except at the extremity, where there are a few separated filaments of a dark-grey colour.'

The female Memura superba differs very little from the male, except in the tail, which is composed of twelve feathers, a little curved and plumaged, having the upper side dark rufous and grey, and the under of a pearly colour.

The more modern descriptions of the tail of the female are the same, but composed of long uniform feathers, which are straight and graduated.

Notwithstanding the sombre hue of this extraordinary bird, the magnificence and peculiar structure of the beautiful tail of the male, which imitates the form of an antient Grecian lyre, gives it a superb appearance.

Locality.—South New South Wales, principally in the forests of Eucalyptus and Casuarina which cover the Blue Mountains, and in their rocky and retired avenues.

Habits.—Lieutenant Collins says that the following particulars relating to these birds were observed by persons resident in the country, and who were eye-witnesses of what is here told. They frequent retired and inaccessible parts of the interior; have been seen to run remarkably fast, but their tails are so cumbersome that they cannot fly in a direct line. They sing for two hours in the morning, beginning from the time they quit the valley, until they attain the summit of the hill, where they scrape together a small hillock with their tail spread over the ground, imitating successively the note of every bird known in the country. Then they return to the valley.

If dependence could be placed upon this account as far as relates to the singing, it would assist the views of those who would place Memura near the Thrushes; among the gallinaceous birds, singing, in the common acceptance of the word as applied to birds, is not known. But this sort of statements, taken as they mostly are from the relation of those who are not very careful as to the truth of their communications, if they can only surprise and please their auditors, must be received with many grains of allowance. The 'song' is not corroborated by subsequent observers.

Mr. Caley informed Mr. Vigors, that from the observations he was enabled to make on these birds during his stay in New Holland, it was his opinion that these birds were gallinaceous. Mr. Caley generally found them in flocks, and for the most part on the ground. M. Lesson states that they come forth in the evening and the morning, remaining quiet during the day on the trees. He says, that they are becoming more and more rare, and that he only saw two skins during the whole of his stay at New South Wales. Mr. Swainson informs us that chief-justice Field of Gibraltar, who was long a resident in New Holland, assured him (Mr. S.) that Memura is one of its habits was a gallinaceous bird, living on the ground in small societies, and being very fond of rolling in the dust.
kangaroos and emus are rarely seen, when they might easily be domesticated about the habitations. 'The same remark,' adds, applies to the Lyre Pheasant. 'Why are they not domesticated, before, by extermination, they are lost to us for ever?'

We trust that this may meet the eye of some spirited individual who will not suffer the loss to take place, but himself import these magnificent birds. That they would live in this country, as well as the Emus and Kangaroos, with ordinary care, there can be little doubt; and the would form a striking addition to our avifauna,—perhaps even to our mammalia.

MR. T. PALUS. [Azov, Sia or.]

M. ARA, Dr. Leach's name for a genus of Amphilodous crustaceans.

Example, Meta grossinana, Leach (Cancer Grossinana grossinans, Montagu), 'Linn. Trans.,' ix. tab. 4, fig. 3.

Very common on the English coasts, where it is found under stones and rocks at low water.

MAESTLIN, MICHAEL, a German astronomer, born about the year 1542, probably at Tubingen, in Wurttemberg. At the university of which place he held the chair of professor of mathematics. While resident in Italy he became acquainted with Galilei, whose conversion from the doctrine of Ptolemy to that of Copernicus is partly attributed to some authorities to the arguments adduced by Maestlin in favour of the latter. Upon his return to Germany he came tutor to Kepler, to whom he behaved with marked liberality; for notwithstanding the great benefit which Kepler must have derived from his instruction, he declined accepting any pecuniary remuneration whatever; and Kepler does not appear to have been wanting in any respect towards him, for both in his 'Mysterium Cosmographicum' and in a letter prefixed to the 'Narrative of Rheticus,' he acknowledges the great encouragement he had invariably received from his tutor; and at a later period, when struggling with disappointment and poverty, presents him with a handsome silver cup, bearing an appropriate inscription. Maestlin died at Tubingen, in 1590. His published works are: 1. 'De Stellis nova.' 2. 'Epitome Rerum, according to the Prutenic Tables by Erasmus Reinhold, 1576.' 3. 'Cosmographicus.' 4. 'Cosmographica et Demonstratio Comete anni 1577 et 1578.' Tubingen, 1577, 1579. 4to. 5. 'Consideratio et Observation Cometa,' 1580. Harleian, 1581. 6. 'Alterum Cometen Gregoriani Calendarium.' Tubingen, 1584, 1586. 4to. 7. 'Epitome Astronomiae,' Tubingen, 1586, 1587, 1610, 1618, &c. (Watt's Bibliotheca Brit.)

MAPPÉ', SCIPIO', Marquis, born at Verona 1721, became in 1745, by the death of a cousin, the Duke of Parma, and showed an early aptitude for poetry and literature in general. When the war of the Spanish successions broke out, he entered as a volunteer the Bavarian service, in which his brother Alessandro Maffei held the rank of colonel. He entered the Austrian army for Italy with the view of devoting himself entirely to study. He wrote upon many and various subjects, and generally wrote well. His principal works are: 1. 'La Meropi,' a tragedy, the first written in Italian which preserves the name; it was received with great applause, and went through seventy editions in the author's lifetime. 2. 'Verona Illustrata,' which is the principal work of Maffei, and full of antiquarian and historical learning. The first part contains a history of Verona from its foundation to the time of the revolution; the second part gives an exact view of Verona, with biographical notices of the native writers, the third is a stranger's guide to all the remarkable objects in Verona and its neighbourhood; in the fourth the author describes the Roman amphitheatre in that city, which was one of the best preserved ruins. The whole work is written in a spirit of sound criticism, and exhibits the various features of the social, political, and intellectual state of that part of Italy during a long course of ages. 3. 'Della Scienza chimica, volatilizata in libri tre' dedicated to Pope Clement XI., in which he combats the absurdities of the school of alchemy. 4. 'Three treatises against the belief, then prevalent, in magic: 'Arte Magica dilegua,' 1745; 'Arte Magica distrutta,' 1756; 'Arte Magica annichilata.' 1745. Maffei was charged by one Tartarotti with being almost an infidel because he did not believe in sorcery. 5. 'Trattato dei Teatri antichi e moderni,' in which he took up the defence of theatrical performers against the denunciations of
Father Concina, a Dominican, who attributed to them all the corruption of the age. Pope Benedict XIV, in a brief dated the 6th of October, 1740, addressed to the patriarch, testifying his full approbation of this defence, saying that 'theatres ought not to be suppressed, but that the performances ought to be as much as possible honest and decorous.'

Maffei's most distinguished work is called Magellane, a history and account of the voyage of Magellan, which he wrote concerning the built Unigenitus (Jansenites); and also because he maintained, against two priests of Verona named Ballerini, that it was lawful to receive a moderate interest on a loan of money, 'Impiego del denaro, che non è pecora, non è infamia,' or, in a word, the duty of the Christian to lend money in an honest manner, which he did not distinguish himself by some great enterprise, and finding that these meritorious voyages to America had made it evident that this continent extended to a great distance towards the south, and being at the same time aware that the Moluccas, or Spice Islands, as they then called them, were much farther to the west, he revived the idea of Columbus of sailing to Asia by a westerly course. According to some authorities he proposed the enterprise to King Emanuel, who rejected it; but others assert that he made the proposal in great first instance to the Pope, where it was favourably received by Cardinal Ximenes, the regent, and afterwards approved by the emperor Charles V. A squadron of five vessels, with 236 men on board, was fitted out for that purpose, and Magalhaens left S. Lucar de Barameda on the 10th of October, 1519, on the voyage to the South Sea, or open sea, which would take him to the Moluccas, he directed his course with great judgment to the southern shores of Brazil, and entered the La Plata river, but he was afterwards convinced that it was not a strait. He then sailed southward, and passed the Strait of Capes, or Rodrigo, to pass the winter in the harbour of S. Julian (near 50° S. lat.), where a conspiracy was formed against him. In detecting and putting down this conspiracy he showed great courage, prudence, and resolution. He discovered and named the islet which bears his name, about the end of October, 1520, and reached its western extremity on the 27th of Nov., when he entered the Pacific Ocean. He navigated the Pacific for 3 months and 20 days without finding an island, and during this course he pursued a southerly course and continued with favouring winds, that he bestowed on this ocean the name of Pacific, which it still bears. The length of the voyage however reduced the crew to the greatest distress for want of food, and they began to suffer also from the scurvy. So great was their hardship, that the Philosopher, who wrote an account of this voyage, is firmly persuaded that an expedition round the world would never be undertaken again; and indeed more than fifty years elapsed between the voyage of Magalhaens and that of Drake (1577). On the 6th of July, 1521, he died in the Pacific, and his body was washed overboard. This body was saved by the Spaniards who called Los Ladrones, from the inclination to theft which the inhabitants displayed. After having refreshed his crew, he continued his course westward, and discovered the Moluccas, which he called the archipelago of S. Lazaro. He landed on the western end of the island of Zebas to acknowledge the sovereignty of the king of Spain, promising to assist him in subduing his enemies. With this view he undertook an expedition against the chieftain of the small island of Matan, but he was courageously resisted by the inhabitants, and killed in the contest. The command of his vessels devolved on Juan Sebastian del Cano, who conducted them to the Moluccas, and thence to Spain.

MAGALHAENS, STRAITS OF, commonly called the Straits of Magellan, is the most extensive known strait on the surface of the globe. Its length in a straight line is about 200 miles; but if the three great bents are taken into the account, it is rather more than 300 miles. It divides the continent of South America from the eastern shores of Africa, on the coast of Ajan. The town is situated about 2° 30' N. lat. and 45° E. long., and is the only important place on the whole coast. The harbour is formed by a long coral reef, and the entrance is divided in two by Unuarmo and Palius. The latter contains entirely of rocks. Umarawo contains nearly one hundred and fifty stone houses, built in the Spanish style. It carries on some commerce with Arabia. Its exports are ivory, gum, and a particular kind of cloth; it imports sugar, dates, salt-fish, arms, and slaves. Its sovereign is dependent on the Iman of Muscat in Arabia.

(Owen's Voyages to explore the Shores of Africa, Arabia, and Madagascar.)

Magalhaens, Fernando, commonly but incorrectly called Magellanus was one of the most distinguished sea-officers of his time, and as a navigator and discoverer of the South Sea is to be ranked among the greatest men of his age. He died in the year 1521, in the 35th year of his age, while serving on board the ship Victoria in the service of the Spanish fleet sent out by Philip II. He died in a frigate, and his body was transported in the Victoria to the little island of Trinidad in the Caribbee.
This strait may be considered as divided into three parts. The eastern part extends from Cape de las Virgenes to Cape Negro, and its direction as far as the first Narrow is nearly west, but afterwards to the south of west. In two places the strait contracts to a width of five or six miles, forming the two North capes, which are called the Two Brothers, and the second that of S. Simon. It is extremely difficult and dangerous to pass through these Nares from east to west, as western winds prevail in them nearly all the year round, and the western currents, which set through them, amount at times to as much as 16 miles an hour, run more or less with the salt-water gales, and the climate is much colder, and snow and sleet are common. The great improvements in navigation in modern times have deprived the voyage round Cape of most of its difficulties, but they have not in the same degree removed those which are encountered in traversing the strait. At present a vessel rarely enters the strait unless sent by some government for a special purpose.

Cordova's Voyage of Discovery to the Strait of Magellan; Capt. Phillip Parker King's Observations upon the Geography of the Southern Extremity of South America, &c., in the London Geog. Journal, vol. i.; The Chart of the Strait of Magallanes, surveyed by Captain P. F. King. P. N. (1807, 1810).

**MAGAS.** [Branchiopoda, v. p. 313.]

**MAGAZINE, a strong building, constructed generally of brick or stone within a fortified place, or in the neighbourhood of a military or naval station, in order to contain in security the gunpowder or other warlike stores which may be necessary for the defense of the place, of the use of the troops who are to perform military duty in the province or district.

On account of the liability of gunpowder to become detached from the casemates and by variations in the state of the air, the buildings in which it is contained are constructed with every precaution necessary to ensure dryness, and, as nearly as possible, a uniformity of temperature within them. They are generally in places remote from other buildings, and are constructed of earth and timber, with metallic conduits near or in the walls to avert danger from lightning; and, for security against the attempts of ill-disposed persons, they are surrounded by a wall and ditch. When in situations where they may become the objects of hostile measures, they are made shell-proof.

A magazine within the walls of a fortress is usually formed on an esplanade; and, if small, it may be in the interior of some bastion remote from the front against which an attack of the enemy is likely to be directed. But it would be preferable that such buildings should be in some work beyond the main rampart of the place, that in an accident may be attended with as little detriment as possible.

The powder required for the immediate service of the troops at the front attacked is taken from the general magazine, and placed in what are called expense magazines; that is, in temporary bomb-proof buildings, or in casemates formed in the rampart along that front, from whence it is conveyed to the batteries. These casemates are bomb-proof, and should be as much as possible protected by having doors and windows in the interior side of the rampart, and loop-holes or small perforations on the side next to the main ditch. They sometimes constitute the only bulwark belonging to a fortress; and then they have the utmost importance, serving as a shield for the bulk of the troops, when not on duty, as for the preservation of the powder and stores. [BOMB-PROOF; CASEMATE] In such situations however, as magazines, they are subject to some danger from fire, and are subject to be destroyed by the heat of powder, besides the humidity, which the means possess for ventilation are not sufficient entirely to remove, the blowing up of any one by an accident would evidently destroy the rampart, and expose the place to the risk of an immediate attack. It is, then, of the utmost importance, to be able to destroy the wall which constitutes the external revetment of the rampart on any face of the work, its lateral pressure would facilitate the formation of a breach by overturning the wall as soon as the latter became weakened by the fire from the batteries.
this country consist of several parallel vaults, separated from each other by brick partition-walls, in which are doorways for affording lateral communication. Each vault is about ninety feet long and nineteen feet wide internally, and it has a door at each extremity. The side walls are nine feet to ten feet thick, and are strengthened by buttresses built at intervals against them. The concave or interior surface of each vault, in a vertical and transverse section, is, in a parabolical figure, above the springing courses; and the exterior surface has the form of two inclined planes meeting in a longitudinal ridge-line above the middle of the vault. The arches of the brickwork forming the vaulted roof is therefore various; at the crown it is seven or eight feet, and on the bances about three feet, this being considered sufficient to resist the shock of falling shells. The vault, on the exterior of the inclined planes, is covered with a smooth stucco. Each would thus draw at the sheet-lead or copper. The height interiorly, from the level of the floor to the crown of the arch, is nineteen feet; and the lines at which the vaulting springs from the side walls are at half that distance above the floor. The narrow verticals by Williams, which are made to carry the masters and scholars, and the great freestone end walls, for the purpose of giving air to the interior, are cut so as to leave a solid block or traverse of the brickwork in the middle of the thickness of the wall; the line of the perforation branching laterally from its general direction, and the construction of the brick is such that the whole of the construction, while air is admitted, no object capable of doing mischief can be thrown in from the exterior of the building. The flooring-planks are, of course, laid on joists used considerably above the ground. One vault of the dimensions above mentioned, would contain 2500 barrels, or 225,000 lbs. of powder.

When the roof of a magazine is covered with earth to the height of several feet, for the purpose of securing it effectually against the effect of falling shells, the rain-water absorbs significantly. The earth or wall may be covered with the same thickness; one of the city of London; one of the county of Northampton; one of the county of Wilts. If the vault be of the thickness of the earth, it must be of the diocese of Winchester; seven of the county of Lincoln; four of the county of Oxford; three of the county of Berks; four of the county of Nottingham; one of the county of Shrewsbury; one of the city of London; one of the county of Northampton; one of the county of Wilts. The Demies may be elected from any of the above-mentioned dioceses or counties, with the exception of York and Durham. The Vicar-general is the Bishop of Winchester.

The property of the foundation consists of rectories and vicarages in different counties, with two perpetual curacies, thirty-seven in number.

The number of members upon the college books in 1538 was as follows:

Among the eminent persons who received their education at this college are cardinals Wolsey and Pole, bishops Warner, Hough, and Horne, dean Colet, Lincere, Lily the grammarian, Fox, the martyrlogist, Godwin, the Hebrew scholar, and Thomas Wheler. The buildings are extensive. In one corner of the entrance court stands the stone pulpit from which the University sermon on St. John the Baptist's day used to be preached. This court leads into a larger quadrangle, which contains the chapel, hall, and library. South of the chapel and on the south side of what is called the Chaplain's court stands the tower of the college. The beautiful proportions of which render it one of the chief ornaments of Oxford. The great quadrangle was begun by the founder in 1473, though not finished till after his death. The foundation of the tower was laid in 1492. Previous to the Reformation a mass of requiem for the soul of St. Michael VII. used to be performed upon the top of this tower every May-day early in the morning; this was afterwards committed for a few pieces of music, which are still executed at that day by the choristers, for which the rectorcy of Slimbridge in Gloucester is annually the sum of 100. The foundations of what are called the 'New Buildings' of this college, on the north side of the great quadrangle, were laid in 1733.

The chapel of this college, which had been refitted and decorated in an incongruous manner in the time of Charles I., was restored to its former magnificence under the direction of Mr. Cottingham in 1833. The fine picture of 'Our Saviour bearing his Cross,' over the communion of the many most magnificent portraits of Oxford. It has been attributed by some to Guido, and others to Ludovico Caracci, but it is now given to Morlais. It was brought from Vigo in 1702.

(Gutch's Coll. and Halls of Oxford; Chalmers's Hist. of the Univ. of Oxon. 1819; Oxford Univ. Calendar, 1838.)

MAGDALEN HALL, Oxford. The school, with the refectory and chambers erected by Bishop Waynfleet for students previous to admission into his college, and adjoining halls and quadrangles of the college, constitutes the older part of Magdalen Hall as early as 1487, and was governed by one of the Fellows till 1802, when it became an independent hall. The President and Fellows of Magdalen College, being desirous of recovering this site, obtained, in 1816, an act of parliament to prepare the way for the reception of this society Herford College, which had lapsed to the crown, and the Principal and other members removed there on its completion in 1822.

This Hall is possessed of several benefices, the rectory of South Mortern in Buckinghamshire. It has also several exhibitions and scholarships, open to competition, left by different founders.

The original foundation of Magdalen Hall boasted among its more eminent patrons those of Sir George Wilkins, Warner and Daniel the poets, Sir Harry Vane, Sir Julius Caesar, Lord Clarendon, Sir Matthew Hale, Sydenham, Dr. Pocock, afterwards of Corpus College, Dr. Hickes, afterwards of Lincoln, Dr. Plot, Sir George Wheler, and others.

The buildings of the old Hall were destroyed by an accidental fire, Jan. 9th, 1820.

(Chalmers, ub supra, vol. ii. 433; Oxford Univ. Calendar, 1838; Gent. Mag. sup. vol. xlii. p. 76.)

MAGDALEN College, Oxford, was built by Edward Stafford, duke of Buckingham, in the year 1519, under the name of Buckingham House, on the site of an ancient hospital belonging to the abbey of Ely, Ramsey, and Walden, in which some of the monks of those monasteries resided from time to time. At a much more remote date it is supposed by some to have been the original site of Barnwell Priory. The Duke of Buckingham not having completed the building at the time of his attainder, the crown fell to the crown and was granted to Thomas, lord Audley, lord bishop of Ely, Lord of Ely, and other Audiens who, in 1492, endowed it for a Master and four Fellows.

Beside the foundation fellowships left by lord Audley, this College has thirteen bye-fellowships; one of them is a welling fellowship left by the Rev. Dr. Drury of Worth upwards of 200d. per annum, but tenable for only nine years, and appropriated to the county of Norfolk. The Master has the sole appointment to this fellowship, and the holder must be in holy orders or designed for such.

The master's house of this College is in the gift of the possessor of Audley End.

Beside the fellowships, there are 43 scholarships belonging to this College, founded by different benefactors, some of considerable, others of smaller value; four of them are appropriated to Shrewsbury school; two to natives of Shropshire; two to scholars from Wisbeach school; four to Leeds, Halifax, and Haverhams schools; and one to King's College, London.
The foundation-estate of lord Audley consists of the
improvident parsonage of St. Catharine Cree Church, in
London, and also a considerable part of the city antiently
called Covent Garden Christ Church. The benefits in the
gift of the College, exclusive of the viciage of St. Catha-
rine's, by the Lady Pendarves, and the vicarage of Steeple Ason in
Cambridgeshire, the rectories of Anderby and Comber-
worth united, and the perpetual curacy of Granthorpe in
Lincolnsire; the rectory of Elingham in Norfolk (annexed
[to the mastership by act of parliament); the rectory of
Alconbury in Huntingdonshire, and the vicarage of Steeple Ashton in
Wilt. The Master has the sole patronage of Steeple Ashton.

Among the eminent persons who have been members of
Magdalene College are lord keeper Bridgman, bishop
Walton, editor of the Polygalt Bible, Dr. Howell, the histori-
tographer, and Dr. Hartshorne, secretary of the Admiralty
in the reign of king Charles II. and king James II., and is one of the most interesting in
the University. Its contents are matchless both in variety and
condition. Wed to a few, and are binding in calf, gilt. Besides
numerous manuscripts, this library is remarkably rich in works
from the presses of Caxton, Wynkyn de Worde, and other
early English printers. It contains a curious collection of
codices, bibles, children's books, Raphael's mythological
pictures, and drawings, and a very rare and extensive collection of
early ballads. There is an enumeration of some of the
most interesting works in this library in Harthorns's Book
Rarities in the University of Cambridge, 6vo, London, 1783, 219.

The number of members on the boards of this College,
March 12, 1838, was 168.
(Lysons's Cambridgeshire, pp. 123, 124; Cambridge Uni-
versity Calendar for 1838.)

MAGADAN, [Granada, New.] 

MAGDEBURG, one of the three governments of
the Prussian province of Saxony, is composed of the antient
duchy of Magdeburg, the county of Barby, the bailiwick of
Gommern (without the circle of the Saal), the Altermark
(Old Mark), the bailiwick of the left bank of the Elbe, the
Klotze, the principality of Halberstadt, with Dernburg,
Quedlinburg, Wernigerode, and Schauren. Its area is 4410
square miles, and the population, according to the census of
1837, amounted to 298,081. The government is divided
into fifteen circles. The country is one of the finest parts of
the Prussian monarchy, consisting chiefly of a fertile and
level tract; the hills in the south-west, which are offsets of
the Harz, are low, and in other parts the surface is merely
various and gentle elevations. [SAXONY, PRUSSIAN PRo-
VINCE OF.] 

The duchy of Magdeburg is not to be confounded with
the government of the same name; which contains only a
part of the duchy, the other part being in the government
of Merseburg.

MAGDEBURG, the capital not only of the government but
of the province of Saxony, is situated on the left bank of the
main arm of the Elbe, in 52° 8' N. lat. and 11° 39' E. long.
It is a fortress of the first rank, and one of the most
imporant bulwarks of the Prussian monarchy. The city
consists of four parts and two separate suburbs:—1, the old
town, or principal fortress along the Elbe, with eleven bas-
tions and ten small ravelines between them, with various
works of water and earth, all strengthened by a double,
and in some parts by a triple-coursed wall. The city
mines. South of the old town lies—2, the Stern, a square
casemated tenaille, built under Frederick II. by General
Wallrave, who died here in a prison erected by himself,
who was a member of the Barby, and was burguese, or
the city. The city and the old town there was formerly a suburb called Suden-
burg, which was pulled down in 1811 by the French, who
built on the site Fort Napoleon, now called Fort Sehn-
harst. The long bridge, over the broadest arm of the Elbe,
leads from the city to—3, the citadel, built in 1686, on an
island, by king Frederick I. Over the two smaller arms
of the Elbe, beyond it, there are drawbridges; and beyond lies
—4, Friedrichstadt, or Thurnschwarze (i.e. Tower Fort),
which defends the entrance on the right bank of the Elbe,
where the newly-built Frederick-William bridge, 1809 feet
long, leads over the low ground on the bank of the river.

The suburb of Neustadt, lying to the north, as being
next to the fortifications, was partly destroyed in 1813
by the Prussians, and entirely demolished in 1811 and 1812
by the French, together with the adjoining suburb of
Sudenburg, which was burned with indiscernible public;
Magdeburg, like most old continental towns, has in ge-
near and crooked streets, but having been rebuilt
since its destruction by Tilly in 1631, it is better con-
structed than many antient cities. Among the more remark-
able buildings in the city are the citadel, the buildings of the
city palace, the provincial assembly-house, the artillery
barracks, the government-house, and the theatre.
The celebrated cathedral was completed in 1683, after having been 150
years building. It has two steeples 335 feet high, a lofty
cupola, supported by a high and circular autumn of forty-five smaller altars, a pulpit of alabaster, and a choral
of one block of porphyry. There are twelve churches,
which is Roman Catholic. There are two large squares,
the old market-place, in which is the statue of the em-
peror Otho the Great, erected 1643, and the cathedral
square, which is surrounded by handsome buildings and
avenues of trees. The public establishments and charitable
and scientific institutions are numerous and well conducted;
explained works, with a population of 50,000, is in the case of
the province of Saxony, as well as of the government and
circle, the residence of the chief president*, of a Protestant
bishop, and the heads-quarters of the fourth corps of
the Prussian army, with several public libraries, collections of
paintings, and public amusements, such as theatres, balls, concerts, &c.,
its accounted one of the agreeable residence. It is also
considerable manufactures, extensive breweries and
distilleries, and a very active trade. Magdeburg is rich
a large number of manufactories; the present and earlier
event in its annals is its capture by storm on the 10th of
May, 1631, by the Austrian general Tilly, when it was given
to pillage for three days, and 30,000 of the inhabitants
were put to the sword; the whole city, except the cathedral,
old town, and about 130 houses, was at the same time
reduced to ashes.

(Rathmann, Geschichte der Stadt Magdeburg; Schikler,
Thirty Years' War; Hassel, Stein, &c.)

MAGELLANIC CLOUDS, [Nefoundland.

MAGGIOIRI, LAGO. [Lago Maggiore.] 

MAGI, the name of the priests among the Medes and
Persians, whose religious doctrines and ceremonies are
explained works, and who have been previously put to death by
the Medes and Persians, and who have given the history of this
consacy as length, evidently regarded it as a point on the map of the
plot to the right sovereignty to the Medes, since he re-
This learning of the Magi was connected with astrology and
enchantment, in which they were so celebrated that
their name was applied to all orders of magicians and
enchanters. Thus the Septuagint translates the Chaldeon

* The Prussian governments, or provinces, have each a mayor, at the head of which is a chief president.
M A G I

The etymology of this word is doubtful. In Persian the name for priest is magus; and it is not improbable, as Gesenius has conjectured, that the word may be connected with the root meaning great, which we have in the Greek magos, the Latin magus and magnum, the Persian mish, and the Sanskrit mah-at. It is a curious fact that the Hindu grammarians derive mah-at from a verb mah, signifying 'to worship.' (Wilson's Sanskrit Dictionary, under mah-at.)

MAGIC SQUARE. This term is applied to a set of numbers arranged in a square in such a manner that the vertical, horizontal, and diagonal columns shall give the same sum. Such arrangements were known very early to the Hindus, Egyptians, and Chinese, among whom, as also among the Europeans of the middle ages, a belief existed that such squares had astrological and divinatory qualities. Emanuel Moschopulos,* of Constantiopolite, wrote on them in Greek in the middle of the fifteenth century. Others who have written on the subject are Leibnitz, Frenicle, Sartet, La Hire, Saurin, &c. (See Montuel's History, vol. 1, p. 346; Encyclopédie Méthode, article Quarrés maques; Hutton's Dictionary; and the Mathematical Re- cension of the same author.)

Though the question of magic squares is in itself of no use, yet it belongs to a class of problems which call into action a beneficial species of investigation. Without laying down any rules for their construction, we shall content ourselves with the demonstration of the magic quality, and showing that the nonexistence of such squares would be much more surprising than their existence.

Take any set of numbers in arithmetical progression, and such that their number shall be a square number: say the first six such numbers—

<table>
<thead>
<tr>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9

Take four of these in such a manner as to take one out of each row, and one out of each column, and it will be found, and may easily be proved, that the sum of numbers in every such set must consist of two pairs of corresponding numbers, so that their sum must be twice 17, or 34. The different ways in which this can be done are in number

\[ 4 \times 3 \times 2 \times 1 = 24, \]

as follows.

1 6 11 16 | 2 7 12 17 | 3 8 13 18 | 4 9 14 19 | 5 10 15 20 | 16 11 16 11 | 12 17 12 17

Out of these subdivisions a set may be taken from each, so that no number shall be repeated, in 24 different ways, as in the following sample, which shows the four ways that begin with 1 6 11 16.

1 6 11 16 | 1 6 11 16 | 1 6 11 16 | 1 6 11 16

3 2 5 12 | 5 12 15 2 | 5 12 15 2 | 5 12 15 2

Rang remarks that when he was seeking the animal in India he was struck, like M. de Blainville, with the analogy which the genus presents to a plant; but M. Rang also to many other genera of Pectinibranchiata. This analogy, M. Rang further observes, is especially remarkable when a young individual whose shell has not yet become tubular is examined.

**Description.** — M. Rang states that he saw some fragments of the animal, and that it is certainly a Gastropod. In his description however he notes the animal as unknown. Dr. Rüppell states that it is furnished with an operculum.

**Gen.** — Young: — Fragile, with an epidermis, pyriform, ventricose, with a short spire from of three to four turns; aperture longer than it is wide, oblong, without any notch.

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* Some think this work was written by Emanuel Moschopulos the elder, a Greek, who lived at the end of the thirteenth century.

P. C. No. 886.
The last whorl abandoning altogether the spiral form to produce an elongated tube, which is irregularly sinuous, or irregularly contorted, conical, compressed laterally, especially on the side of the base of the shell, carinated beneath, and free; aperture elliptical.

Shell of Magilus (young).

When in this state the shell presents all the characters of a regularly spiral univalve. The animal establishes itself in the excavations of Madrepores (Astræa, &c.), and as the coral increases around it the Magilus is obliged, in order to have its aperture on a level with the surrounding surface, or near it, to construct a tube, which is more or less eccentric according to circumstances, the growth of the coral determining the length of the tube. As this tube goes on increasing, the animal abandons the spiral for the tubular part of the shell, and in this operation it leaves behind no septa, or partitions, but secrete a compact calcareous matter which reaches to the very summit of the spiral part, and is deposited from time to time as the tube is lengthened; so that in an old specimen the posterior part of the shell presents a solid and almost crystalline mass. Indeed the fracture of this mass is radiated and scabrous. One species only, Magilus antiquus, is known. The colour is white, more or less pure.

Shell of Magilus (old).

The reader will find the differences between Magilus and Leptoconchus, as stated by Dr. Rüppell, in the article on the last-named genus.

MAGLIABECCHI, ANTONIO, born at Florence in 1632, early showed a great aptitude for philological and historical studies; he was an indefatigable reader, and had a prodigious memory. He employed his scanty savings in buying books, and gradually collected a vast library, which since his death has become the property of the city of Florence, and is open to the public, and known by the name of Magliabechian.
ject against other oppressions, then frequently arising from unreasonable amercements, from illegal distresses or other process for debts or services due to the crown, and from the tyrannical abuse of the prerogative of purveyance and preemption. It fixed the forfeitures of lands for felony in the same mode and manner; the grants of exclusive fisheries, and the erection of new bridges so as to oppress the neighbourhood. With respect to private rights: it established the testamentary power of the subject over part of his personal estate, the rest being divided among his wife and children; and laid down the law of dower as it hath continued ever since; and prohibited the appeals of women, unless for the death of their husbands. In matters of public policy and national concern, it enjoined an uniformity of weights and measures; gave new protection to the English against the encroachment of alien strangers, and forbade the alienation of lands in mortmain. With regard to the administration of justice: besides prohibiting all denial or delays of it, it fixed the Court of Common Pleas at Westminster, that the suitors might no longer have been prevented following the king's person in all his progressess; and at the same time brought the trial of issues home to the very doors of the freeholders, by directing assizes to be taken in the proper counties, and even in counties beyond the sea. A violent course was also taken against those inordinate jurymen, who belonged to the exchequer, and regulated the time and place of holding the inferior tribunals of justice, the county court; sheriff's court, and court-leet. It confirmed and established the liberties of the city of London, and all other cities, boroughs, towns, and villages, without例外; and so planned that the king would have been bound by the letter that it bears of the great charter, it protected every individual of the nation in the free enjoyment of his life, his liberty, and his property, unless declared to be forfeited by the judgment of his peers or peers of the realm.

Such a concession from the king was not gained without a violent struggle; in fact he was compelled to yield it by an armed force, consisting of a very large portion of the baronage, which he was far too foolish and weak to alien. The name of the chief was preserved by the chroniclers of the time, and in the charter itself; and whenever recited, they called up to this day a mingled feeling of respect and gratitude, the respect and gratitude which men pay to those who have obtained for them the admission to those positions, though it may appear that those privileges were nothing more than rights of which they had been deprived, and to which therefore they may be said to have been justly entitled. They appear the patriots of a rude age, and the men of the day, Robert de Brus, Robert de Scrope, Robert de Montacute, William de Beauchamp, many others of families long after famous in English history, the progenitors of the ancient baronial houses of England.

The charter was signed, or rather sealed, not in any house, but on a place called Runnymede, between Windsor and Staines; but it was not merely by an accidental meeting of two armies at that place that this act was done there. For it appears by Matthew of Westminster that Runnymede was a place where treaties concerning the people of the land and the barons were made, and some persons came with great solemnity. The memorable day was June 5, 1215.

What was unwillingly granted, it could scarcely be expected would be religiously observed. Unquestionably it was written in, as would his son King Henry III., but the barons were watchful of their own privileges, those of the church, the cities, the boroughs, and of the people at large; and King Henry was led to make one or more solemn ratifications of the charter to keep the rights thus guaranteed fully in the eyes of the people.

a copy was sent to every cathedral church, and read publicly twice a year.

See the work of Sir William Blackstone, entitled 'The great Charter and Charter of the Forest, with other authentic Instruments; to which is prefixed an Introductory Discourse concerning the History of the Event,' Oxford, 1759, 4th. The late Board of Commissioners on the public Records caused to be engraved and published an exact fac-simile of the charter, from a copy preserved in the archives of the cathedral church of Lincoln, with other of the greater charters.

The ancient customs and laws of England were the subject of the work, entitled 'The English Law and Custom of the Realm,' these charters are all printed, with English translations of them.

MAGNA GRACIA, or MAJOR GRACIA (Liv. xxi. 7; Justin, xx. 2), was used to designate the south of Italy, in consequence of the numerous and flourishing colonies which were founded by the Greeks in that part of the country. There is some difficulty in determining how far north this name extended; but it does not appear to have been applied to the country beyond Campania and Neapolis; and some geographers have thought, though without sufficient reasons, that it was confined to the colonies on the Gulf of Tarentum. Pliny apparently considers Magna Graecia to begin at the Locri Epizephyri (N. H., iii. 19); but Strabo even includes the Greek towns of Sicily under this name (v. 175, Casaubon, 1587).

The time in which the name of Magna Graecia was first applied to the south of Italy is uncertain. It does not occur, as far as we are aware, in the early Greek writers, Histo-...

MAGNE'SIA. [Anatolia.]

MAGNE'SIA. [Magnesia.]

MAGNESA, MEDICAL PROPERTIES OF. Oxyde of magnesia, termed also, from the mode of procuring it, calcined magnesia, or magnesia usta, is an alkaline earth possessing the usual qualities of alkalies in their habits of combination, the formation of acids, and likewise the peculiar property of exciting generally purgative action of the intestines. This last-mentioned power gives it a distinctive character among alka-...

MAGNESIA. [Magnesia.]
agglutinated by the mucous secretions, give rise to much uneasiness. [Antacidus]. When however acidity exists, either along with constipation or diarrhoea, more particularly in children, from the milk disagreeing, or from a diet unsuited to their delicate organs of digestion, being fed upon, magnesia is used in preference to other medicines, as it appears to possess a specific power of diminishing gastrointestinal irritation. (Hufeland, quoted in Pereira's Material Medic.) It is generally expedient to add rhubarb to it, but it is sometimes given without, and in some cases the combination is peculiarly useful in what is termed diarrhoea crupulosa, arising from too great a mixture or too large a quantity of food.

Where it is determined to use magnesia, and sufficient acid is present in the stomach to procure the formation of a soluble salt, a little lemon-juice may be added to it. The subcarbonate of magnesia has nearly the same action as the calcined magnesia, but when it meets with acids in the stomach effervescence takes place, accompanied with a disagreeable sensation. It is therefore not of so much advantage in some cases as that it is inconvenient, in other instances extremely beneficial. In some almost uncontrollable irritations of the stomach, where food and medicines are alike rejected, subcarbonate of magnesia may be retained, and, by allaying the irritation, allows other remedies to be subjoined with advantage.

Both the subcarbonate and the calcined magnesia are much used to correct heartburn, and to check the lithic acid diathesis; but their employment requires much judgment and attention.

**Sulphate of Magnesia, or Epsom salts,** in the ordinary form, as met with in the shops, are small acicular crystals. This renders them liable to be confounded with those of oxalic acid; to avoid which the sulphate may be dissolved, and the crystals separated by depositing them on a vessel lined with a solution of acetic acid.

The taste of sulphate of magnesia is bitter and very unpleasant; but this is very much lessened by large dilution in water, which at the same time increases the purgative action of the salt, or by sending it to the table by giving it in compound infusions of roses and adding a few drops of dilute sulphuric acid, which augments the refrigerating property of the medicine. The addition of a little common salt to a solution of sulphate of magnesia increases its cathartic powers.

No saline medicine so extensively employed as the sulphate of magnesia as a purgative; it is more rarely used as a diuretic or diaphoretic. Its action as a purgative is in general mild and certain, causing a considerable evacuation of the bowels, and in some individuals a large formation of flatus, accompanied with perspiration. Many of the saline mineral waters reported to be for the cure of indigestion are chiefly indebted to the sulphate of magnesia for their purgative properties.

The sulphate of magnesia is a very simple, and yet a very valuable medicine; it is never really harmful to the stomach, and if not over-dosed, should always be used and safely employed.

**Magnesian Limestone, in English geology, a formation of the pelitic or new red-sandstone system; also the name of a group of limestone beds, which constitute the principal part of that formation, in general containing a notable quantity of magnesia in their composition.** Details regarding the formation will be more usefully combined in the account of the system of which it constitutes the base. We shall consider it ourselves a notice of the limestone of England.

This rock is seen to greatest perfection in England between the rivers Tyne and Tees, between the rivers Wharf and Dun, and between this last river and Nottingham. We mention these parts of the great line of magnesian limestone of England for the sake of pointing out some interesting differences in the composition and other characters of the rock. It is in the middle part of the course here indicated, from north to south, that the stratification of the rock is most developed. Between the Dun and Wharf, and for some space north and south of these rivers, this limestone occurs, in fact, in two rocks of this nature, from each other, but of red and bluish, with gypsum (indistinguishable from some of the upper or Keuper marls of the red-sandstone formation), but in the northern and southern parts this difference does not obtain. Of the two limestones thus separated, the upper one has, as a rule, a more calcareous character. In such a case of combination it is peculiarly useful in what is termed diarrhoea crupulosa, arising from too great a mixture or too large a quantity of food.

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The text continues discussing the various uses and properties of magnesia and magnesian limestone, providing historical and geographical context for its occurrence and utility. The text also includes references to medical uses, geological formations, and historical references to specific locations in England, such as Huddersfield, Broadworth, and Yorkshire. The text concludes by noting the value of magnesian limestone in architecture and its historical significance.
brown, or reddish, while the upper rock is commonly of a grey, smoky, or purplish hue. This rock is usually interstratified with thin clay partings, the lower one very rarely.

The species of carbonatite is usually greater than that of common carbonate of lime. This however may be overlooked in the usual incomplete mode of trying such experiments, unless the maker observes the easy correction due to the absorption of water by many of these rocks (for example: in the process, the magnesian limestones of England betray, by their weight, their affinity to the dolomitic rocks of the Alps and the Eifel, though the introduction of the magnesia is probably not at all due to the same cause in the two cases.

The 'Geological Transactions,' on the Magnesian Limestone, has pointed out clearly the most common organic fossils of this rock. We shall only observe here that in respect ofPaleocene, &c.), mollusca (Prodices, Spiroidea, &c.), and zoophyta (Retepecora, &c.), this rock shows an extreme analogy with the carboniferous system. Its place, by mineral analogies, may be rightly fixed in the pozzolanic system; but, by the affinities of organic existence, it will be classed with the molassic rocks. Let any one, for example, contrast its marine fossils, whether derived from Durham, Yorkshire, or the Thuringerwald, with those of the muschelkalk; the former are seen to be analogous to fossils common in the mountain limestone, the latter to those of the limestones in the Hebrides. In an instance like this, the species are not identical, but the results above announced is unequivocal, and must soon be felt in geological classification.

(See also Geol. Trans.; Smith's Geological Map of Yorkshire, &c. Notices of contemporaneous deposits in the midland and southern counties of England occur in Mur- chon's Stratigraphic System; Conybeare and Phillips, Geol. of England and Wales, &c.)

Magnesia, a peculiar metal, of which magnesia is the oxide, a substance that was originally sold under this name by a Roman canon in the beginning of the eighteenth century. It is stated to have been first procured by calcining the residue left after evaporating the mother-waters of lime, by which it is at present obtained will be presently stated.

The existence of magnesia was first demonstrated by the electro-chemical researches of Sir H. Davy: he found that when moistened, magnesia was negatively electrized with mercury, and an amalgam was obtained which decomposed water and gave rise to magnesia, by the oxidisation of the peculiar metal amalgamated with the mercury; he did not however obtain a sufficient quantity to enable him to prepare an equivalent of magnesia. M. Bussy obtained it by decaying a leaf of plant in a solution of magnesia.

Magnesia is of a white colour, like silver; its lustre is metallic and brilliant, it is very malleable, and fusible at a red heat; in dry air it undergoes no change, but in moist air it is superficially oxidized; it may be boiled in water without suffering any change. When heated red hot in air or oxygen gas it burns brilliantly, and, combining with oxygen, becomes magnesia. In chlorine gas it burns spontaneously. It dissolves in dilute sulphuric and hydrochloric acids, with the evolution of hydrogen gas, and it is oxidised and dissolved by dilute nitric acid, and mutate of magnesia results.

Oxygen and Magnesia, from what has just been stated, combine very readily, but only in one proportion; and the result of this combination is, in diverging red globules, in which this substance was first obtained has already been mentioned. It is now procured by decomposing sulphate of magnesia by means of carbonate of soda, and subjecting the washed and dried carbonate precipitated to a strong heat of fire. When heated red hot in air it is expelled, and the magnesia, or oxide of magnesia, remains, which has the following properties: it is colourless, inodorous, and tasteless, if pure; if it does not, like lime, become hot when mixed with water, and it is very nearly insoluble in it, although when moistened it exhibits the alkaline property of turning vegetable yellow brown; by exposure to the air it attracts carbonic acid, and is reverberated to the state of magnesia by the action of fire.

It appears, from indirect experiments, to be composed of

| Equivalent of Magnesium | 12 |
| Equivalent of Oxygen | 8 |

Equivalent 20

Chlorine and Magnesia act readily upon each other, the metal burning spontaneously in the gas; it may also be procured by tumbling dry chlorine gas over a mixture of magnesia and lime, heated to a red heat, in a porcelain tube. According however to Liebig it is best obtained by dissolving magnesia in hydrochloric acid, evaporating the solution to dryness, mixing the residue with an equal weight of hydrochloride of ammonia, and projecting the mixture in small portions at a time into a red-hot platinum crucible. When the ammonical salt has been expelled, fused chloride of magnesia remains, which, on cooling becomes a transparent colourless mass; it is inodorous, intensely bitter, very deliquescent, and soluble both in water and alcohol. This salt is one of the saline ingredients of sea-water, and exists in the bittern left after preparing common salt, mixed with sulphate of magnesia. It is also found in some mineral waters, and was formerly called magnesite of magnesia.

When a solution of chloride of magnesia is concentrated by evaporation, and exposed to a very cold atmosphere, it yields deliquescent prismatic crystals which contain much water.

It is applied to no direct use; sometimes however the bittern which contains it is decomposed by an alkaline carbonate, for the purpose of forming carbonate of magnesia.

It consists of

| Equivalent of Magnesium | 12 |
| Equivalent of Chlorine | 35 |

Equivalent 48

Bromine and Magnesia may be obtained in combination by dissolving magnesia in hydrobromic acid; by evaporation small acute prismatic crystals are precipitated, which have a sharp taste, are very deliquescent, and soluble both in water and alcohol. When heated in the air these crystals are resolved into hydrobromic acid and magnesia.

Fluorine and Magnesium unite when magnesia is dissolved in hydrofluoric acid. The compound formed is insoluble in water, or in hydrofluoric acid, and is not decomposed by a red heat.

Carbon and Magnesia.—No compound of these is known.

Sulphur and Magnesia do not combine when heated together, nor is a perfect sulphuret formed when sulphur is heated with magnesia. The compound is not soluble in water, but burns if ignited. When however a solution of sulphuret of barium is added to one of sulphate of magnesia, then, according to Berzelius, sulphate of barytes is precipitated, and sulphuret of barium remains in solution.

Iodine and Magnesia.—A compound of these is obtained when magnesia is dissolved in hydroiodic acid; it is very soluble in water, and known only in solution. It is stated also that when magnesia is heated with iodine in water, both iodide of magnesia and iodate of magnesia are procured.

Magnesia, or Oxide of Magnesia, combines with most acids to form salts, two of which are of great importance in medicine; but we shall first mention the

Hydrate of Magnesia.—This is a saline compound, and was first discovered in serpentine in New Jersey, and since in Unst. It is white, with a greenish tint, foliated, and easily splits into thin flexible laminae. It has a pearly lustre, translucent on the edges. Specific gravity 2.35; hardness 1. It is stated to occur at Hoboken, in New Jer- sey, in charming needlework crystals. It is composed of about 31 water and 68 magnesia, with a little oxide of iron and manganese; these are nearly in the proportion of one equivalent each of water and earth.

Hydride of magnesia may be obtained artificially by precipitating a solution of the sulphate with soda. The precipitate, after drying at 212°, retains about one-fourth of its weight of water.

Nitric Acid and Magnesia readily combine, and yield nitrate of magnesia. The solution is colourless, and ex-
Magnesia forms a great number of double salts, and one of these, the magnesian limestone, which is a double carbonate of lime and magnesia, is found in immense quantities in different parts of England. [MAGNESIA LIMESTONE].

Magnesia is also in a great number of mineral bodies as stannite, talc, asbestos, &c.

Magnesia salts are mostly soluble in water; by the addition of soda they yield hydixe of magnesia, and by adding carbonate of soda, hydrated carbonate of magnesia.

The heat of a solution of magnesia is so much below that of the same quantity of water, that it cannot have any precipitatio in solutions of magnesia salts, until heat so as to repel the excess of carbonate acid. Phosphate of soda added to magnesia solution gives no immediate precipitate, but on the addition of ammonium it is made instantly white powder, and this is the best mode of testing the presence of magnesia, when the requisite precautions are adopted.

MAGNET (derived from the Greek μαγνήτης) is a metallic body possessing the remarkable property of attracting iron and some other metals. It is still not very abundant near Magnesia in Lydia, from which circumstance its name may have been derived. The attracting power of the magnet was known at a very early period, as references are made to it by Homer, and others. Pliny, who states that ignorant people called it ferrum vacuium, or quick-iron, a name somewhat analogous to our load-stone. The same author appears to have been acquainted with the power of the magnet to diminish the effects similar to the load stone.

When found native, it is generally a heavy ferruginous mass of a dull greyish color, but the ores of cobalt and nickel also frequently possess the magnetic properties.

The universal law, that reaction is existent with action, implies that the reaction must result in a change of state, and be found in fact, that if one piece of iron is fixed, and a small magnet be suspended by a string near it, the magnet will then be moved towards the iron; thus all the iron to the mass of the globe is upon a magnet.

It is not easy to define the nature of the magnetic bodies [ELECTROMAGNETISM]; but heat has an influence on magnetic intensity. Hence it follows as a natural consequence, that if a magnetic needle be suspended by its centre of gravity, so as to be free it will assume a position like unmagnetized bodies, but must have a direction, namely, that which represents all the magnetic forces to which it is subject in a given place. Thus the needle is said to be magnetized, and that point is called the axis of orientation or declination, the other first is the angle formed by the vertical plane of the needle with the plane of the meridian; the inclination of the line of the needle to the horizon is called the dip, and the angle between the horizontal by sustaining it horizontally on a point research different from its centre of gravity, and the angle made by the direction of the needle with an exact and horizontal north-and-south line.

This peculiar observation is called its polarity, and is a characteristic of its other properties above noticed; the fact, however, escaped the notice of the Greeks and Romans, but the Chinese appear to have been acquainted with it from a very remote date. It is the most useful of all the properties of the magnetic bodies of importance to the mariner, when the magnet is considered in the form of the compass-needle.

Dr. Gilbert, who was physician in ordinary to Queen Elizabeth, first described the magnetic properties of the earth in 1600. Gilbert bestowed much study upon the theory of magnetism, and to some extent inculcated the doctrine of gravitation, by comparing the earth to a great magnet.

His theory on this subject is given in a work entitled "De Magnete" published in 1600. His definition of a term 'pole of a magnet' arose from that theory, which remarkably conformed to the notions of the present day for the north pole of the magnet he denominated the north pole, in connection with his theory, while Ptolemy, in his element 'Memoirs on Magnetics and Salts' (1661) gives an account at that extremity of the magnet the Ausstral Fluid, because like electricity repel Electricity, so, on his hypothesis of the magnetic fluids, that occupying the north and south pole, a magnetized needle is repelled by the austral fluid.

The application of the compass to the purposes of war.
MAGNETISM.  When a magnetic needle is freely suspended by its centre of gravity, it is then acted on by all terrestrial bodies containing the magnetic fluids, whether in a fixed state, as in loadstone-ores, or in a state susceptible of change, as in masses of soft iron, and also by electrical currents, whether produced by the chemical changes which various substances in the globe continually undergo, or arising from the unequal distribution of heat both upon the earth and in the atmosphere, as in different latitudes. The direction of the resultant of all such forces may be regarded as possessing parallelism throughout the extent of the needle, and the latter acquires in consequence a like direction in the plane of the magnetic meridian, of which the position becomes in this manner known.

If a needle thus suspended be made to oscillate in the plane of the magnetic meridian, and the time in which a certain number of oscillations are performed is observed, and thus the time of a single oscillation deduced, the connection of this time with the intensity of the magnetic force is expressed by the formula $t = \pi \sqrt{I}$ similar to that used for the common pendulum. In this equation $t$ represents the time of one oscillation, $\pi$ the number $3.14159$, $I$ the distance between the centres of oscillation and gravity, and $F$ the accelerating force of magnetism. Hence we deduce also $F = \frac{1}{I}$; consequently when one and the same needle is used in different experiments, the force $F$ is inversely as the square of the distance $I$ of one of a given number of oscillations from the centre possessing the magnetic intensity, and ingenious contrivances to that end have often been suggested and used, but the object of ascertaining the relative value of $F$ is equally attained by supporting the needle horizontally, as in the compass, and observing the time of the horizontal oscillations. If $\theta$ represent the dip, then by the resolution of forces the horizontal part of the magnetic force is $F \cos \theta$; if $\phi$ now represent the time of (suppose 300) oscillations, then by the preceding formulæ we must have $F \cos \theta$ inversely as the square of $T$; $F = \frac{T^2}{T^2 \cos \theta}$ or longitude, then $F = \frac{T^2}{T^2 \sin \theta}$ which formula the relative intensities of terrestrial magnetism at different places may be ascertained with little trouble.

The times of 300 oscillations in seconds at the following places are taken from a table computed by Hansteen at Stockholm 815, Edinburgh 820, Christiansand 820, Oxford 780, Danzig 770; Gottenburg 812, Liverpool 801, London 775, Berlin 760, Paris 753, Liibeck 776, Altona 775, Johnskruen 861, Christiansia 814, Ingolfsland 833, Copenhagen 785, Breslau 741.

The locus of all the points at which the intensity of terrestrial magnetism is the same quantity as at one given place is called the icodynamic line passing through it. These lines are generally of double curvature, but neglecting this, which may also be said of the lines of equal dip, they run generally parallel to each other and to the latter lines, in the temperate zone, but in other cases these two classes of lines intersect at a considerable angle. M. Hansteen states that the intensity of magnetism is less in the southern than in the northern hemisphere. M. Biot has given a formula deduced from hypothetical considerations, which has been found nearly coincident with the observed cases of terrestrial intensity, viz. intensity $\propto \sqrt{(4 - 3 \sin^2 \theta)}$ being the dip as before.

As the declination and dip have diurnal variations, so also has the magnetic intensity; the minimum being between ten and eleven in the morning, and the maximum in about six hours afterwards. The intensity is also greatest in December, and least in June.
MAGNETISM. If we take a natural or artificial magnet, and, spreading over a piece of paper a quantity of fine iron filings, place the magnet on the paper, taking it up, we shall find that the iron filings are attached to it in some degree over all its surface, but they will be principally accumulated at two points situated near the ends of the magnet; these points are called the poles of the magnet. Sometimes when a magnetic bar is rolled amongst iron filings, we may find several such points along the bar; the magnet is said to have consequent poles.

At present we shall consider only the first or simple case of two poles, which we may represent by the letters N and S. When a needle formed of this material is suspended horizontally on a thread, it assumes a position clearly different from a needle near north and south. [Magnet.] The pole N, at the north extremity of the needle thus adjusted, is commonly called the north pole of the needle; the other, S, the south pole, though the contrary names, as used by Dr. Bell, may be more correct in connection with the theory of magnetism.

If we now bring a piece of soft iron near the pole N, it will be attracted to that pole and become attached to it, so that the exertion of a mechanical force is necessary to separate them. To this property of magnetism, let us add, that a piece of iron, provided the weight of the iron does not exceed the magnetic force. The pole S has a similar attractive power on iron; the cause of this attractive power is called MAGNETISM.

We may consider that in a magnetic needle placed horizontally on a pivot, the pole N is turned northwards, and S southwards, nearly; if such a needle be attached to a piece of cork, floating on water, it will adjust itself to this direction, the deviation of which from the true north-and-south, is the designation of the needle. If now we invert the position of the needle, so that S is brought into the place previously occupied by N, and vice versa, the needle and cork will make a complete revolution, and assume the opposite position. Every magnet possesses a distinct line between the two magnetisms predominant at N and S; the former is called Austral, and the latter Boréal magnetism. It will be easy to observe the analogy between the mutual relations of the two magnetisms, and those of positive with negative electricity.

We must insulate a conducting electrified substance in order to preserve its electricity, but this is not necessary in the case of a magnet; each fragment of the latter is itself a magnet, possessing its north and south poles, and the same view may be extended to its constituent particles. A nonconducting energy, called the coercive power, exists therefore in magnetic substances, by which the loss of magnetism when developed is prevented, and by which also the poles N and S are in a determinate position relative to the body of the needle. This is not the case with soft iron, which has not the coercive force.

The force of magnetism is exerted without alteration through substances which are not magnetic; the same is true with respect to the electrical force. A nonconducting body may be placed in the line of direction of their action. On the other hand, the effect of the magnetic forces is considerably modified when substances which are capable of becoming magnetic by influence are situated near the magnet; and a similar place by the mutual neutral electricities when under the influence of an electrified body. [Electricity.] The transmission of the magnetic force through interposed bodies may be observed familiarly by placing a common sewing-needle on a smooth horizontal board, and moving a strong magnet underneath the board: the needle will roll or revolve along the board according to the peculiar motions given to the magnet.

Let us next consider the action of magnets on each other. For this purpose make two magnets or magnetic needles to float on water, distinguishing the poles of one as before by N and S, and of the other by N' and S'. Bring either of the magnets towards the other; both magnets will separate to a greater distance, and with the greater energy the nearer these poles are placed to each other. On the contrary, if we bring N and S' near each other, the needles will approach and unite those points, and the same happens when the poles N and S are made contiguous: hence this law—magnetisms of the same name are mutually repulsive; those of contrary names are mutually attractive. In the article ELECTRICITY, is proved that if we have stated that the same law is true with respect to the two electricities.

The mass of the globe contains various sources of magnetism [Magnet]; and since a magnetic needle freely suspended acquires a determinate position, it follows from this law that the magnetism at the southern extremity of the Boreal, that is, of the same name as the terrestrial magnetism which is predominant in the northern hemisphere, being repelled therewith; and the magnetism at the north extremity N is for like reason Austral. The law of magnetism force at different distances is expressed by the or scale; square of the distance: the best mode of verifying this law is by observing the times of the oscillations of a small fine wire, suspended in a plane perpendicular to the magnetic meridian (in order to neutralize the magnetising influence of the earth), and subjected to the action of a powerful magnet.

We can, by combining these laws, explain the manner in which soft iron, cobalt, and nickel are attracted or suspended by the poles of the earth. These metals contain both the austral and boreal magnetism in a combined state, in consequence of their want of coercive power. When a piece of soft iron is brought near the pole N, which contains the austral fluid, the austral magnetism of the earth is repelled to the farther extremity by the pole N; and the boreal attracted to the nearer extremity of the iron relative to the point N; this disposition of the fluid takes place immediately, and the law of force above announced relative to the distances causes the attraction of the fluid at N, on the other and repulsion at S, at the farther extremity of the soft iron, which is more remote from N: the total effect, in virtue of this excess, is therefore necessarily attractive. When the iron however is removed from this influence, its natural magnetisms again recombine. This will not be the case if, instead of soft iron, we used a magnet; the decomposition of the natural magnetisms takes place with greater difficulty, in consequence of the coercive power which protects their actual disposition; if we place a powerful magnet at one extremity of a sphere, the magnetism of the sphere, or, which is the same thing, the austral magnetism, will not be repelled at both extremities, the north pole of one and the south pole of the other being brought in contact with the needle, the decomposition will be partially effected, and will likewise be less perfect if the magnetic poles are not the same cohering with each other, their development; and agreeably with the magnetic laws of repulsion and attraction, that point of the needle in contact with the south pole will become a north pole of the needle, and the other a south pole. This method of producing magnetism is liable to the objections both of producing feeble magnetism and also producing consecutive points.

The quantities of the austral and boreal magnetic fluid in all magnetic bodies are equal; for when we bestowed magnetic qualities on iron or steel by the influence of lodestones, we brought in such an amount of a magnetic fluid, that, if suddenly, no new magnetism is communicated; but the natural magnetisms, which previously neutralized each other, are now decomposed. Again, if a magnetic needle be freely suspended by its centre of gravity, the action of the natural magnetisms produces a line of force which imposes a direction on the magnetic axis: now all the boreal fluid in the globe attracts all the austral fluid of the needle, and vice versa, while the like fluids in both repel each other; if a simple progression would be given to the rotation of the needle, the resistant of the repulsions of the needle was exactly equal and of an opposite direction to the resultant of all the attractive forces; and the rotatory motion of the needle shows that the points of application of these forces are different; but the intensity of terrestrial magnetism may be regarded as uniform throughout the extent of the needle, and its direction parallel. In order therefore that the pendulums should be equal on each, the contrary, the same may in the austral forces of the needle.
must be equal. In this respect magnetism resembles the natural electricities of all substances.

The development of magnetism in bodies, whether by terrestrial action or the influence of lodestones, is analogous to the decomposition of the natural electricities in a system of bar magnets, bodies being bar magnets. But however the influence of an external body and their own natural action: hence when magnetism is communicated by a lodestone, even when in contact the latter loses none of its own magnetism, as it acts solely by influence; whereas in contact electrized bodies will communicate electricity: the coercive force of magnets therefore extends even to their surfaces. In fact the reaction of the substance magnetized by influence tends to a further decomposition of the fluids of the magnetizing body, and this gives it greater magnetic power than the lodestone; that is, when the internal magnetic forces are equal to the coercive power; for then any further development of the fluids would be only temporary, and a reunion would take place immediately.

If the needle be a magnetic needle, the opposite poles of which possess equal magnetic intensities. It is attached to the centre of a vertical circle, and its motion is confined to the plane of this circle. The circle has a motion in azimuth about a vertical axis, and within a fixed horizontal plane: and if we suppose the horizontal circle is turned round its axis until the needle acquires a vertical position, the plane of the circle is then perpendicular to that of the magnetic meridian, and hence by means of the horizontal circle the position of this meridian plane is ascertained. But if a magnetic needle is now brought to coincide with the meridian plane, and the angular depression of the north pole of the horizon, or more strictly of the magnetic axis, may be read off the graduated limb of the vertical circle, and measures the dip. The right line joining the centre of the magnetic meridian plane coincident with the magnetic axis, but the latter may be ascertained more accurately by inverting the needle and taking the mean direction between its two positions of equality. There are other methods of adjusting the dipping-needle, but it is the method it is the most easy and minute attention to all parts of the adjustment.

If we place a bar of soft iron, suspended by a collection of silk strings at its middle, in a direction parallel to the magnetic axis, and magnetize it, the action of terrestrial magnetism will have full effect on the bar, its natural magnetism will be decomposed, and it will acquire a polarity similar to that of the needle, its poles repelling the similar poles of the needle, and attracting the contrary poles. Its magnetism is greatest at the middle, and vanishes at the extremities of its different parts when the bar is moved into other positions; for if we invert the position of the bar, that point which was primitive north pole will now become the south, and vice versa, under the effects of a new decomposition of its magnetic fluid. Let the bar be long enough so as to acquire some oxygenation, or if it be heated to a red heat and suddenly cooled by immersion in water, it will acquire a coercive force, and become permanently magnetic. As it crosses, weathercock, &c., which have been long kept in a fixed position, or have been struck by lightning, acquire magnetic properties in the manner above described.

In a remarkable circumstance connected with the change of molecular disposition caused by the action of heat, that if we gradually heat a bar of iron, the intensity of its action on a magnet, increases, and arrives at a maximum when the bar is brought to a cherry-red heat; with higher degrees of heat the magnetic property of the needle becomes immeasurable, and destroyed; and the bar has reached a bright white heat; on cooling it recovers its powers of action by similar steps, and the same law holds true if the magnet be heated instead of the bar. Hence in producing the greatest development of the magnetic power, we have the advantage of using iron or steel bars at a red heat.

Magnetism may be developed in iron, steel, cobalt, and nickel, by other means than the influence of bodies already magnetized, as twisting, hammering, electrical discharges, and galvanic currents, &c. If we place a bar of iron in a vertical position, and give it a series of slight blows with a hammer or poker, it will acquire a feeble degree of magnetism; hence it happens that the anvils and other tools employed in smithies are endowed with magnetism. In all such cases the mechanical operations tend to bestow a coercive power, while the terrestrial magnetism separates the fluids in the body.

Cavallio, Benett, and Coulomb marked the indications of magnetism given by various substances, as copper, silver, and gold, and particularly observable in hammered copper, and scarcely perceptible when the copper has been cast, as an attention to which circumstance is of considerable importance in shipbuilding. Coulomb formed very fine needles of various substances, and suspending them by silk strings between the opposite poles of two bar lodestones, found that they were acted on by the latter. This phenomenon is attributable to the existence of minute quantities of iron, or iron compounds in those different bodies. The intensity of the magnetic action Coulomb found from direct experiments to be proportional to the quantities of composition contained in the bodies, and he afterwards applied this principle to discover the quantity of iron contained in impure metals.

From the preceding observations on the properties of the magnetic fluids it will be easy to understand the principles of the interposed pieces of soft iron connected to the artificial magnet. By the method of magnetizing a bar of hard iron or steel we have been able to choose but a small part in the whole extent at right angles over one of the poles of a strong magnet. In this case the dip of the object which can be compressible by the iron is produced, and therefore to be used, the first contact with the bar decomposes its neutral magnetisms, attracting to the point of contact the boreal and repelling the austral; the successive parts of the bar are subject to a similar decomposition of their fluids, and it is evident that the action neutralizes the succeeding, except at the extremities; the magnetism thus developed is therefore feeble, and apparent only at the extremities of the bar, or in some consecutive points formed by peculiarities in the internal composition.

Dr. G. Knight greatly improved the mode of magnetizing bars in the following manner: he joined two strongly magnetized bars by their ends bearing contrary names, and placing on them the directly from the steel bar two pieces of soft iron interposed; then taking two bundles of magnetic bars, he united their poles of contrary name near the middle of one of the steel bars, and by inclining the bundles made one of them pass towards one extremity of the other steel bar, the second towards the opposite extremity, and then successively repeated the operation, when both the steel bars became strongly magnetized, but with contrary magnetisms at the corresponding extremities of each. In this method the decomposition of the neutral magnetisms of the interposed pieces of soft iron connected to the effect produced by the contact of the magnetized bundles with the steel bars.

Epinus, adopting a similar method, preferred interposing strong magnets instead of soft iron, the relative position of the poles of the magnetized steel bars becoming reversed. Conceived this scheme combined the advantages of these different methods by composing his magnetized bundles of bars at a cherry-red heat. A fine steel needle may be very strongly magnetized by the method of placing in the pole of a steel bar a metal wire or helix, the extremities of which are brought in contact with the wires of a powerful galvanic battery. The poles of a bar magnetized to saturation are near its extremities, within generally a few lines, while the intensity becomes insensible at a distance of an inch; in a needle, on the contrary, may be represented by the difference of the ordinates of two logarithmic curves, the origin of one being at the austral, and of the others at the boreal extremity of the needle.

When bodies containing neutral magnetisms are made to rotate rapidly round an axis, the magnetism becomes developed and acts on the needle; thus a plate of copper made to revolve rapidly in a horizontal plane will influence a compass-needle placed over it, and produce in it a rotation in the same direction, on which subject several valuable ob-
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Observations have been made by M. Arago, Sir John Herschel, and others. It has also produced a second mathematical memoir from M. Poisson, in which the mechanical force generated by rotation is introduced into the general equations deduced from his theory of the distribution of magnetism in lodestones.

The consideration of the distribution of magnetism throughout the globe has led to various explanatory hypotheses since the time of Halley; the position, the number, and the motions of the points which may be regarded as poles of magnetism, and the discussion of opinions formed on inconclusive grounds. The excellent tables and maps of Hansteen have given a greater degree of certainty to this subject. The French government having lately sent out an expedition from the Aden to the Cape, the report of which may be shortly expected; and the British government having appointed Captain James Ross with a view to similar objects in the Pacific, we shall defer to the article TERRITORIAL MAGNETISM for a further account of their proceedings.

For the theory of magnetism as connected with electricity, consult Robison's Course of Lectures; Biot's Physique; Becquerel, Traité de l'Électricité; and Captain Kater's Practical Experiments. For the mathematical theory on the subject—the Memoirs by Poisson; Ampère's Électro-Dynamique; and Murphy's Electricity, chap. vii., Cambridge.


MAGNETISM. ANIMAL [ANIMAL MAGNETISM.] MAGNETIFYING POWER. [MICROSCOPE; TELESCOPE.]

MAGNITUDE. This term is generally used synonymously with number, and is sometimes employed instead of the latter, as the distinction between the first two terms is not more marked than this:—he who answers the question "how much?" describes the quantity, and he who answers "how great?" describes the magnitude. But since magnitude is used by us in our language as applied to amount of space, we may best describe our own idiom by laying down quantity as the general term, and stating magnitude to mean usually the quantity of space. The term however must be considered, in a mathematical point of view, as originating in the comparison of the unit, and it is not as applicable to amount of space, by him, not particularly as applied to space, but also to everything which admits of the introduction of the notion of greater or less. In this sense then, we have many magnitudes (all moral qualities for instance) which are not the object of mathematical treatment. So necessary is the notion of magnitude to our conception even of things which we cannot measure, that we borrow idioms from subjects within the province of mathematicians. Thus we speak of form, rank, and of it being greater in one individual than in another. According to the definition of magnitude, namely, "that of which greater or less can be predicated, when two of the same kind are compared together," it follows that we include both mental as well as material objects of comparison. But the mathematician in practice the point, that no such object can be made matter of exact reasoning, unless in cases which admit of the comparison being performed according to some method the results of which shall be self-evident, and inscapable from our notion of the thing measured. Hence, if A and B be two magnitudes, and they are then, and then only, the objects of mathematical comparison, when other magnitudes equal to A and B can be found, and added together as often as may be desired; and when, moreover, any collection of As can be compared with a collection of Bs, so as to ascertain which is greater or less than the other. Angels furnish an instance of magnitude the conception of which is exceedingly vague in the mind of most beginners, which takes precision and certainty in the course of mathematical study. Magnitudes, thus capable of comparison, are the objects of the doctrine of proportion. [See also NUMBER; QUANTITY.] That part of geometry which precedes proportion considers only the simple alternative of equal or unequal, made of inequality being necessarily deferred until after that conception is attained.

By the magnitude of any bounded space the mathematician means the results of measurement which will be described in Solid, &c. Dimensions: but the common idea refers to that which the mathematician calls for distinction as magnetic magnitude. It is correct, in the common sense of the term, to say, that a man at a distance of 100 miles, the eye is larger than a remote mountain. In these judgments of objects, the angles which they subtend at the eye form the means of comparison. Experience, derived from the comparison of objects and of distant points, teaches us how to make those deductions which are necessary before we can learn the absolute from the apparent magnitude.

It is soon found that an object, as it recedes, grows smaller, that is, subtends a less angle. It is also seen that the receding objects, by numerous distances, diminish into points. The former is a consequence of the law of light which takes place in its passage through the air; wore not for this, the same object would be equally bright at all distances; for though the quantity of light which enters the eye is diminished by increase of distance, the intensity of that light from which the eye appears to proceed is diminished in the same proportion. The law of distinctness is a consequence, first of the law of light, next of the different proportions in which different colours are lost: the effect of the interpreted atmosphere. The eye can readily be shown by producing instances in which we are deceived, the object being either such as is not commonly seen, or seen under unusual circumstances. A central statue mounted on a column does not suggest the idea of a man of unusual size to persons in general, because some person mounts the same height, and affords means of comparison. In a fog, which diminishes the distinctness of objects, but does not affect the angles under which they are seen those objects, the eye is naturally less affected; an increase of distance, as the object recedes, makes the person appear nearer in a clear day than a hazy one. Those who wear spectacles may satisfy themselves, by breathing on the glasses, and watching an object as the moisture evaporates, that increase of distinctness and decrease of magnification are connected.

The angle subtended by an object is inversely as its distance, which is sufficiently near for common purposes: when angles are small, which is generally the case. As a man of six feet high, at the distance of a hundred feet, a person of the same height is seen under an angle of 1°; at one mile, under an angle of 3°; and the moon under an angle of 30° to 34°.

MAGNOLIACEAE, an important natural order of also monious polygalaceous Exogenia, consisting of flowerless trees, inhabiting the temperate parts of both the Old and New Worlds. It is a large and very extensive order, the species of which are capable of cultivated in all civilized countries. In England, where the climate is less severe than in other parts of the world, there are many genera of the Magnoliaceae, among which the most highly valued are those of the genera Magnolia, Fuchsia, and Hyacinth. The flowers of Magnolia are large, sweet-scented, and the leaves are firm, broad, and long, in consequence of which many of the species are objects of cultivation in all civilized countries. In England, where the climate is too mild for the cultivation of many of the large-leaved trees, they have become objects of interest in the garden, and are cultivated in all civilized countries. In England, where the climate is less severe than in other parts of the world, there are many genera of the Magnoliaceae, among which the most highly valued are those of the genera Magnolia, Fuchsia, and Hyacinth. The flowers of Magnolia are large, sweet-scented, and the leaves are firm, broad, and long, in consequence of which many of the species are objects of cultivation in all civilized countries. In England, where the climate is too mild for the cultivation of many of the large-leaved trees, they have become objects of interest in the garden, and are cultivated in all civilized countries. In England, where the climate is less severe than in other parts of the world, there are many genera of the Magnoliaceae, among which the most highly valued are those of the genera Magnolia, Fuchsia, and Hyacinth. The flowers of Magnolia are large, sweet-scented, and the leaves are firm, broad, and long, in consequence of which many of the species are objects of cultivation in all civilized countries. In England, where the climate is too mild for the cultivation of many of the large-leaved trees, they have become objects of interest in the garden, and are cultivated in all civilized countries. In England, where the climate is less severe than in other parts of the world, there are many genera of the Magnoliaceae, among which the most highly valued are those of the genera Magnolia, Fuchsia, and Hyacinth. The flowers of Magnolia are large, sweet-scented, and the leaves are firm, broad, and long, in consequence of which many of the species are objects of cultivation in all civilized countries. In England, where the climate is too mild for the cultivation of many of the large-leaved trees, they have become objects of interest in the garden, and are cultivated in all civilized countries. In England, where the climate is less severe than in other parts of the world, there are many genera of the Magnoliaceae, among which the most highly valued are those of the genera Magnolia, Fuchsia, and Hyacinth. The flowers of Magnolia are large, sweet-scented, and the leaves are firm, broad, and long, in consequence of which many of the species are objects of cultivation in all civilized countries. In England, where the climate is too mild for the cultivation of many of the large-leaved trees, they have become objects of interest in the garden, and are cultivated in all civilized countries. In England, where the climate is less severe than in other parts of the world, there are many genera of the Magnoliaceae, among which the most highly valued are those of the genera Magnolia, Fuchsia, and Hyacinth. The flowers of Magnolia are large, sweet-scented, and the leaves are firm, broad, and long, in consequence of which many of the species are objects of cultivation in all civilized countries.
bark. Magnolia glauca is among the best bitter and aromatic species known in medicine, and the Tulip-tree affords to the North American settler a substitute scarcely inferior to it.

The genera Talaula and Magnolia have the very singular property of dropping their seeds out of the back of the seed-vessels when ripe, allowing them to hang down, each suspended by a long extensible elastic cord, composed of delicate spiral vessels.

A branch of Talaula thomis.

In consequence of the seeds of Magnoliaceae containing an abundance of oil which often becomes rancid soon after they are gathered, it is difficult to transport them to a considerable distance in a living state. The best method of succeeding in that object is to pack the seeds in earth as soon as they are ripe, pressing them close and securing them in a box. Under such circumstances they will preserve their vitality for several months.

MAGNUS, ALBERTUS. [ALBERTUS MAGNUS.]

MAGO. [CARTHAGE.]

MAGO. [COLUMELLA.]

MAGPIE. [CORTINX, vol. viii., p. 68.] In addition to the habits of this bird and its geographical distribution stated in the article above referred to, M. Temminck quotes M. Bodd as authority for its building its nest in edifices, and living very common in Norway. It lives as high up as Lapland, and is common in the Morin. Dr. Von Siebold and M. Bürger observed it in Japan, where it is known by the name of Kaarii, and is precisely identical with the European magpie.

MAHAMUNI (the city of the great Bālī), a village on the Carnatic coast, in 12° 36' N. lat. and 80° 16' E. longitude, about 35 miles south from Mahār. In the immediate neighbourhood of this village are a great number of ancient sculptures in a high state of preservation. They consist of groups of human figures, lions, elephants, bulls, monkeys, and cats, all of the natural size, and various other animals or monsters. These figures are all cut out of solid blocks of granite, and were evidently connected with mythological subjects.

In the face of a granite rock behind the village is an excavated gallery with pillars, and near to it is another large excavation, the walls of which are covered with sculptures, having reference to the Hindū mythology. To the north of the village is a temple containing a statue of Ganapati, thirty feet high, which is cut out of a single block of granite; and about half a mile on the south side is a group of temples from seventeen to thirty-six feet in height, formed of the same material. Some smaller caves are seen in the neighbourhood, and everywhere about are scattered fragments of sculptures similar in character to those above described.

A temple dedicated to Vishnu, a tank, and some architectural ruins in the adjoining plain, are held by the natives to be of an equally remote antiquity with the sculptures, but this opinion does not appear to be well founded. The inhabitants have a tradition that the city of the great Bālī stood on the shores opposite to the site of the present village, but is now covered by the sea. It appears however that the opinion of the sea having swallowed up or washed away several pagodas is groundless, and it is even doubtful if the tradition above referred to does not rather apply to a place on the Mahābar coast, where the memory of a prince named Bālīn was preserved and celebrated by an annual festival. It appears that the true Sanscrit name of this place on the Coromandel coast is ‘Mahāmatalaipura,’ or ‘the city of the great mountain.’

(Babington, On the Sculptures and Inscriptions at Mahāmatalaipura, in Asiatic Transactions, vol. ii.)

MAHĀBHĀRATA, or BĀRATAM (‘belonging to Bhārata and his descendants’), the most celebrated epic poem of the Hindus after the ‘Rāmāyana.’ A passage in the introductory part of the work (1, 2296) has given ground for the assertion that it contains the round number of a hundred thousand distichs or aedae; but in order to complete this enormous amount, the ‘Harivansā,’ a mythological history of Krishna, and sundry other pieces, have been added. The eight principal composition (Parsa) of the ‘Mahābhārata’ contain about 85,000 aedae, and even these may be reduced to 24,000 distichs, of which the original ‘Bhārata,’ without its episodes, is said to have formerly consisted. (1, 101.) The principal subject of the ‘Mahābhārata,’ to which all its various episodes but as the Punjab brethren were favoured by their friend and ally, the heavenly Krishna, and as they were themselves, according to the legend, begotten by several deities, after a long struggle against the Kuru princes, and after many perilous adventures and bloody conflicts, they were finally established in the sovereignty of India.

In this main texture of the ‘Mahābhārata’ is interwoven a great variety of episodes; or more properly speaking, the history of the Punjab and Kurus is the leading thread by which an immense collection of ancient traditions, moral reflections, poetical descriptions, and popular stories of every kind, has been connected. It is very important to observe that these accessory elements, which now form almost three-fourths of the whole poem, are stated in the poem as if not to be examined, not to be questioned, but in fact they are for the most part very loosely inserted; and as many of them are epic productions of considerable length, the principal theme is not only frequently interrupted by intervening episodes, but often totally lost sight of, even when the most active progression should be expected. Thus, for instance, the metaphysical system of Panjali is propounded by Krishna, in the eighteen lectures of the much admired Bhagavadgītā, just when the army stands disposed in full array and ready for battle.

The interesting and varied collection of the ‘Mahābhārata’ is particularly consecrated, is occupied in solving theological and cosmogonical problems, blended
with those wild and fantastical conceptions by which the metaphysical mind of the Hindus is so deeply tinged. The two verses win the last chapter of the work, and after the conclusion of the great war, are added didactic and moral episodes on religious duties and sacrifices, on solitary and penitential life, and on final beatitude, forming almost a complete system of Indian ethics, and a compendium of the Brahminical faith. The second class of episodes, which may, although in some respect improperly, be called historical, consist of various and ample traditions of former epochs, and are occupied in recording the origin, genealogy, and history of ancient kings and heroes; in giving an account of the various national and personal adventures, and their splendid actions; and in exhibiting their piety and devotion in fulfilling those duties of a religious life by which the favours of the heavenly beings are to be acquired. These and similar narratives are chiefly accumulated in the third and last part of the 'Mahabharata,' and is called the Vautparvan (book of the forest), where they are told by the Mahabharatie sage Markhandeya, for the purpose of entertaining, consoling, and animating the dejected spirit of the Pandu princes during their exile and penitence. In this respect, the episcopalian pieces of the 'Mahabharata' may be compared with the rhapsodies sung by Phemius and Demodocus in the Homeric poems, and as many of them are marked with a peculiar simplicity of manners and customs, they might almost be considered as a counterpart of the fifth or the minor day of a grand epic poem, of which they are totally independent. This leads us to the original composition of the 'Mahabharata,' which in the introductory part of the poem is thus related.

The most celebrated sages, with their disciples, were associated with the sacred works. The venerable Krishna Dvaipayan, with the surname of Vyasa, who had been an eye-witness of the great civil war, is requested by king Janamejaya to give an account of those bloody events, in which, two generations ago, his own ancestors had played a fatal part. This account, by Vyasa (the Buddha) or the Vyasa II. of the Vedanta, was readily performed by one of his disciples, Vaisampayana, who, being duly instructed, and from memory familiar with the heroic poem, recites it at full length to the listening audience. A similar festival being afterwards celebrated by king Suka, Vyasa was requested to narrate the collection of events which, according to Hindu tradition, collected the Vedas and Puranas, and composed the Brahmadattas of the Vedantia school. But as these operations could not be executed by the same individual, it has long been acknowledged that the name of Vyasa (implying deponent) does not signify a distinct historical person, but rather an allegorical character, including the important fact that the four great parts of the sacred canon were digested by the same orthodoxy body of learned Brahminical seers. Each of these poems, one of every branch of the traditional and scientific learning of the Hindus has been successively propagated and preserved. Hence a religious and priestly character prevails in the epic poetry of the Hindus; in this sense the 'Akhilayana' is official, and the 'Akhilayana,' as well as the 'Mahabharata,' are in fact considered as the 'Sastra' of the Kshatriya caste, for whose recreation, encouragement, and instruction they were originally designed. Compared with the other two, the 'Mahabharata' is wanting in unity and homogeneity, and is rather a collection of episodes, gathered round the central history of the Kuru and Pandu: but for this very reason it surpasses the former poem by a greater variety of pleasing scenes and attractive situations in its episodes, the characters of which are very often delineated with great fidelity and delicacy of religious duty, he directed his arms against the quiet and peaceful Hindus, and first attacked Jeypal, the neighboring king of Lahore, in 1001. This expedition having
proved successful, Mahmud invaded Hindustan almost every year, and in no less than fourteen subsequent incursions, made his way in various directions and as far as the careless sea and the feeble resistance of the Hindu rajahs would permit him to proceed, he devastated the provinces, ravaged and plundered the cities, destroyed the places of religious worship, and murdered the inhabitants, always returning with an immense booty. In the year 1018, the factless city of Kanope was destroyed; and shortly after the antient and magnificent Mathura, whose palaces and temples of marble and alabaster filled even their savage conqueror with respect and religion. The remotest inroads of the Saracens were directed against the celebrated temple of Somnath (Somanath) in Guzerat (1025); and although these transitory invasions of Hindustan were only undertaken to satisfy his fanaticism and avidity, and without the intention of permanently occupying the ravaged provinces, he now almost thought of making the city of Naherwaleh his new capital. Nevertheless Mahmud retired to Chorsuan, laden with the inestimable treasures of the Indian temples. After having once more attempted a predatory excursion into Mulian, he died at Ghom, another much lamented, nor exilled by his contemporaries, whatever flattery had done during his life-time by praising his justice and equity, and softening the leading features of his character, which were cruelty and avarice. All that can be said in praise of Sultan Mahmud is, that the Venetians are afraid of his name; and the Saracens, that the satirical poems of Ferdusi testify, even his liberty and favours were in a great degree dependent on his capricious temper, and were often bestowed in a very niggardly manner. About these miles from the modern city of Ghom, the tomb of Mahmud is still preserved, and in remembrance of his having been a zealous defender of the faith, Mohammedan priests are maintained, who constantly read the Koran over his grave. (Michaud, Historia Osmenidaria, ed. Wilken, Bertel.)

MAHOMET I., son of Bayazid I., was sandjak, or governor, of the town and district of Amasia when his father was defeated and taken prisoner by Timur at the battle of Ankara (July, 1401). The invader having left Asia Minor, Mahomet, of the Venetian origin, and Venice its chief and only rival, was not content with what he had gained; he invaded the district of Bursa and killed, and Mahomet became sole sultan of the Ottoman empire, 1413.

Mahomet was the restorer of the Ottoman empire, which he had been so long interfered with, and the protector of Byzantine chests into Europe, and obliged the princes of Bosnia, Servia, and Wallachia to pay him tribute. He also equipped a fleet to resist the attacks of the Venetians by sea. He died, after nine years' reign, 1421. He was succeeded by his son Mourad II.

MAHOMET II., son of Mourad II., was proclaimed emperor of the Ottoman after the voluntary abdication of his father in 1444; Mahmoud however was obliged by a mutiny of the Janizaries, who objected to his son's youth, to accept for his son a successor of his, or rather an impostor, appointed at the beginning of 1451, when Mahomet, then twenty-two years of age, commenced his reign. He broke the true existence with the Byzantine emperor, by building a fort on the European side of the Bosporus, opposite to the fort of their predecessors. Bayazid had built on the Asiatic coast of the strait, by which means Mahomet established a complete command of the Bosporus. This led to remonstrances from Constantine Palæologus, the Byzantine emperor, to whom Mahomet wrote, and invited the Peloponnesus. At last, having assembled an immense host, rated by some at 300,000 men, with a formidable artillery, and the Imperial troops, and led his army into Europe, and besieged Constantinople in April, 1423. After fifty-four days' siege the Ottomans carried the city by storm on the 29th of May, 1453. Constantine full bravely fighting in the breach, over a heap of the slain. After three days of plunder and massacre Mahomet restored order, released most of the prisoners, granted to the conquered the free exercise of their religion, and gave them the use of one half of the existing churches; the remainder, and the best of them, Santa Sophia among the rest, were transformed into mosques. Mahomet remained nearly three years at Constantinople, after which he returned in triumph to Adrianople, which was then the residence of the Ottoman sultans.

In 1456, after invading Servia, he laid siege to Belgrad, but was opposed and defeated by John Hunyadis, a general of the Hungarian nobility and a great favourite of the kingdom in the absence of king Ladislas. This was cleared through which the Mohammedan armies encountered in their advance towards Western Europe. At the same time Mahomet's generals were defeated in the mountains of Albania by Scanderbeg. The Turks however took Corinth and the Morea. In 1461 they took Trebizond, and put an end to the dynasty of the Comnenes. In 1462 they took Lesbos and other islands of the Archipelago. They next conquered Bosnia, and Mahomet, after promising safety to those who renounced their faith, was taken prisoner of that country, and put to death. In 1465 Mahomet marched against Scanderbeg, but was defeated under the walls of Cria. But Scanderbeg lost all the open country, and dying soon after, left his infant son John Castriot, under the guardianship of the Venetian senate. In 1475 Mahomet took the city of Nice, and also the islands of Syme, Chios and Lesbos, which became his tributary. The Turks invaded also Dalmatia and Frioul, in 1476, and advancing as far as the Tagmate, obliged the Venetians to sue for peace, which was concluded between them and Mahomet, in January, 1475, by which Venice gave up Corfu, and others of the Ionian islands to Ottoman, and took Tocat in 1472. [Contarini, Ambrigo.] Mahomet hastened to encounter him, and a battle was fought near Trebizond, in which the Turks had the advantage over the Persians, who withdrew beyond the Euphrates.

During the Crimean war, which continued still, but was speedily concluded, the sultan, as usual, increased his power.

Mahomet was a successful conqueror. He was cruel, like most of the Ottoman warriors; but he was not an illiterare or rude barbarian. He knew several languages, Persian, Arabic, and Greek; was fond of poetry, and was a good letter-writer. Several of his letters have been translated into Latin, and published by Landini, Lyon, 1529. Three of his letters, addressed to Scanderbeg, are found in Melchior Junius's Collection, 1595. He founded two men of letters, the historian Constantine, and the painter Ambrogio. He was distinguished by his cruelty, such as that against a Greek female, Irene, and the story about Bellini the painter, rest upon doubtful authority. [Bellisi, Gentile.] His bad faith however is fully proved, in the instances of the unfortunate Erzis of the prince of Bosnia, and others. In Turkish history he is styled Mahomet the Great and the Conqueror. (Knowles's History of the Turks; Mignet, Histoire de l'Empire Ottoman.)

MAHOMET II., succeeded Mahomet III. in 1595. He began his reign by putting to death all his brothers. Giving himself up to idleness and pleasure, he left the government in the hands of his ministers, who were under the influence of his mother. His troops were defeated by the Imperial troops, and by Battut, prince of Transylvania, and they lost Gran and other places. Mahomet, being roused from his apathy, collected a large force, with which he entered Hungary and took Agram; but he soon left the army, and hurried back to his capital. The war
was carried on in Hungary by his generals, but with no successes to the Ottoman arms. In the meantime revolt broke out, and the Asiatic provinces and the janizaries at Constantinople mutinied. In the midst of all these disorders Mahomet died, in 1603, and was succeeded by his son Ahmed I. 

At CUPRT IV, son of Ibrahim L., succeeded his father, who was strangled in a meeting of the janizaries in 1654, when Mahomet was seven years of age. His mother assumed the regency; but a fresh revolt of the janizaries soon overthrew her power, and she also was put to death. Mahomet V., Kupruli, was never sent to the post of grand-vizier, or prime-minister. Like many other officers who have distinguished themselves in the annals of the Ottoman empire, Kupruli was an Albanian. He and his son Achmet after him were the ruling ministers during the greater part of the reign of Mahomet IV., 1687, troubled himself little with state affairs, being chiefly engrossed with the sports of hunting and other pastimes. The two Kupruli spread a last ray of departing glory over the decline of the Turkish state. The elder Kupruli, after reprisings by seven enemy embarks sugarily as a storm within, formed a new fleet to oppose the Venetians, who, under the two gallant brothers Mocenigo, threatened to force the passage of the Dardanelles, in 1657. He also sent his fleet to carry on the war in the island of Candia, where they were defeated by Montecuccoli, general of the Venetians, at the battle of Kespia, 1663, in which peace was concluded. The same year Mahomet Kupruli died, and his son Achmet Kupruli became grandvizier. In 1667 Achmet went in person to Candia, and the siege of the capital town of the same name began in real earnest. The Venetian general Moremini directed the defense. In September, 1669, Moremini, after a most gallant resistance, having exhausted all his resources, made an honourable capitulation, and at the same time concluded a treaty of peace between Venice and the Porte upon terms more favourable to Venice than they have been since [History of the Turks.] 1677, Kupruli, unlike the barbarian Mustapha, who in the preceding century had atrociously violated the capitulation of Famagusta [Cyprus], faithfully kept the conditions granted to the Venetian garrison, and allowed a free passage to all the refugees who had been driven from their homes, and who had been forced to take refuge in the mountains, and kept up constant predatory warfare in the neighbouring provinces, plundering and destroying wherever they penetrated. The wealth thus acquired by them caused them to be joined by vast numbers of seafaring corsairs, who roamed the coasts, and ventured to make the most of their misfortune. This constant struggle for their subsistence, they were, at the death of Aurungzebe in 1707, more powerful than ever. From the death of Sambazie in 1699 till the year 1718, the Turkish government was administered by the Pasha, Nasr, whose office became hereditary in the family of Beyzade Ishmael, his first successor, who fixed his residence at Poona. He was succeeded by his son Bajazet Beysor, who was killed in 1710. The son of this Nasr, who filled the office for 11 years, and dying was succeeded by his son Narain Rao. This chief was murdered in 1773 concerning which event various different statements are given. By one it is said that the murder was committed by his brothers, who, being jealous of his elevation, and the usurpation prevented by twelve chiefs, at the head of whom was Bajazet Pundit, better known as Nama Faroese, who set up Sevaje Madhoo Rao, the posthumous son of Narain, and administered the government during the minority. With the exception of this year, 1718, which gives a very different version; he states that the murder was committed by the chiefs before mentioned, that the son of Sevaje Madhoo Rao being the son of Narain was designated as the successor. This was the opinion of the nobles. To be the right man for the post, this young traveller who arrived in the city of Surat, being unsuccessful in his attempts to purchase the favour of the potentates, for a very short period, he was engaged to replace him in his office, and took possession of Salsett and Bassein, much to the will of Ragoba, who offered other territory as a reward for the successful conclusion of the transaction. Upon his giving way on this point, an English force of 25,000 men was put in motion in his favor. Natives had at the same time been opened with the mutiny of Poona, who, yielding to the captivity of the English, revolted to the side of the latter and induced to withdraw all active assistance from Ragoba, retired to Surat with only 200 attendants. Sevaje Madhoo Rao died in consequence of an accidental fall in 1795.
MAI

after some considerable dissensions his son Bejew was
declared Peshwa. This chief continued in power until Oc-
tober 1822, when his forces being totally defeated near Poona
by Jeswunt Rao Holcar, he fled to Bassein and placed him-
self under the protection of the British government. In the
following year he was reinstated in his capital by General
Wellesley, who, in the hope of securing the co-operation of
the Maratha, gave him the title of Peshwa. The king of the
confederacy was at the same time defeated, and the states
of the British residence near Poona. This treacher-
ous conduct was speedily punished, his forces were on the
following day routed by the English troops, and he became
a fugitive, and was hunted down, that his capital was sud-
denly attacked and destroyed, having first plundered, the
houses of the British residence near Poona.

In the early period of Mahatta history the system pre-
valing of the nominal head of the people conferring large
grants of land on the principal chiefs, and of delegating to
them the government of the country, was the last attempt
in one, assumed the state and attributes of princes, but
still, with that attachment to ancient forms and that respect
for hereditary power for which the Mahattas have always
been remarkable, they acknowledged the supremacy of the
nominal head of the state, but either submitted to or evaded
his authority as best suited their interest at the moment.

MAIA. [MAIDEN] MAIDEN HAIR, the common name of
the Adiantum Capillus Veneris, a fern found wild in many parts
of Europe, is a native of the Near East, and has been
known; its having formed a part of the preparations used by ladies
for stiffening their hair. ( Dioscorides. 1, v. e. 136.)

MAIDSTONE, a corporate town and parliamentary
burough, in the parish and hundreds of Maidstone and
county of Kent, of which it is the county and assize town.

Maidstone is situated on a pleasant declivity chiefly
on the right bank of the Medway, about two miles above
Allington lock, eight miles above Rochester, and 32 miles
above London.

The town, though constructed on the river the tide came up to Maidstone.

It consists of four principal streets, which are well paved
and adorned, and it contains many well-built houses. There are
two reservoirs for supplying the town with water, one
from a spring near the church, and the other from a spring near
the opposite banks of the Medway, which river is here by crossed a very antient
bridge of several arches. The derivation of the name
' Maida stone' is not precisely known; at least, va-
vary etymologies are given by Camden, Hasted, and
others. According to Nennius (Catalogue of the
Cities of Britain), this place was called by the British Caer Med-
awrd, or Medawg, signifying the town or city of the Med-
awr. At a very early period Maidstone formed part of the
fortified town or castrum, a part of the general survey of Domesday under the title of the lands
of the archbishop. The charters of incorporation are those of
Edward VI, 2 Elizabeth, 2 and 17 James I, 34 Charles
II, and 21 Geo. II. The first of these was forfeited in the
year 1631, and the second in the year 1632 in consequence of
the suppression of the leading members of the corporation in the
rebellion of Sir Thomas Wyatt.

The revenue of the corporation in 1835, arising from
landed property, tolls, &c., was estimated at 1114l. The
amount of property that has passed from the town to the
future, the chief item in which is the interest on this debt,
is supposed to be about equal to the income. Since the
establishment of the police under the Municipal Corporation
Act the expenditure has been considerably increased. The
bills of the part of the debt paid off. The town is divided into six wards: the town-
council consists of 6 aldermen and 18 councillors.

The town is said to be in a thriving state. There are
manufactories of felt and blankets, but these are of limited
extent compared with paper-mills, which employ up-
wards of 800 hands. The traffic up and down the Medway
is considerable, and has been materially increased by the
construction of the lock for improving the navigation. The
imports consist chiefly of coal, timber, groceries, iron, and
other manufactures. The exports are chiefly fish. The stone from the
quarries of Kentish ragstone in this parish is much used for
building and paper. The aggregate tonnage of the vessels pass-
ing through Allington lock is estimated at 128,000 tons, upon
which tolls, the amount of 2600l. are annually col-
lected.

There is no borough goal: the justices of the borough
commit all prisoners to the county gaol, and the expense
of their maintenance, amounting to one shilling per day
for each prisoner, is defrayed out of the borough-rate. On the
east side of the river there are cavalry barracks.

Near to the town is a spacious commercial room
used as a Corn Exchange. The archbishop's palace is a
Gothic structure, rebuilt about the middle of the fourteenth
century. Since that time it has undergone considerable
alteration, and in its present state is a pleasant and conven-
tient residence. The chapel of the Church of England.

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tient residence. The chapel of the Church of England.
MAI/DIE, or MAIANS, the second tribe of the family of Oxyrhynchi, according to the system of M. Milne Edwards, composed of brachyurous crustaceans, whose carapace, nearly always very spiny, is, with some exceptions, much longer than it is wide. Rostrum generally formed of two elongated horns. First joint of the external antenna but little developed; that of the external antennae, on the contrary, very large, and soldered with the neighbouring parts so as to be confluent with them; its external border is considerably protracted and a little greater in length than the orbit, and its anterior extremity united to the front before the level of the internal canthus of the eyes. The moveable stem of the antennae always of considerable length. The antennary joint generally wider than the anterior feet is longer than it is wide. The third joint of the external *jau-feet* is as wide as it is long, more or less dilated on the external side, and truncated or notched at its anterior and internal angle, by which it is articulated with the fourth joint, which is very small. The anterior feet of the female are in general hardly larger or longer than the others, and sometimes they are even shorter. The same conformation obtains in some of the males; but in general the first pair of feet in these last are longer and much larger than the second pair, and their length sometimes is equal to twice that of the carapace. They are directed obliquely forwards and outwards; the hand is never triangular, and the immovable finger of the claw is not inclined downwards, so as to form a decided mole with the lower edge of the hand. The succeeding feet are generally of moderate length; those of the second pair are most commonly once and a half the length of the post-external portion of the carapace, but they are never twice as long as that portion; those of the third pair are hardly ever more than once and a quarter as long as the post-external portion of the carapace, and the outer feet shorten in succession. The abdomen is ordinarily composed of seven distinct joints in both sexes; but sometimes this number varies in the different species of the same genus. (M. Edwards.)

**Genera. Libinia. (Leach.)**

This genus has the greatest relation to *Doclea* and *Pisa*, but between which genera it establishes, in the opinion of M. Milne Edwards, a nearly insensible passage. The general form of the body in *Libinia* approximates closely to that of *Doclea*.

**Generic Character.**—Carapace very convex above, in general nearly circular, with its orbito-frontal portion sensibly above the level of its lateral borders, which are prolonged towards the mouth rather that towards the external canthus of the eyes. Sometimes the carapace is elongated a little, and bears a considerable resemblance to that of some line of *Pisa*. Rostrum small, narrow, and notched in the middle; the front, measured between the orbits, is much narrower than the anterior extremity of the buccal frame; the anterior angle of the superior orbital border is projecting, but never reaches beyond the basilar joint of the external antennae. The eyes are nearly circular, and directed very obliquely forwards and outwards; their external angle is formed by a large compressed tooth, which is separated from the rest of the wall of this cavity by two fissures; one superior and very narrow, the other inferior and more or less open. The stomachel region of the carapace is but little developed, but the branchial regions highly so, and their lateral border, which is armed with spines and very much curved, is directed towards the antero-marginal line of the mouth. *Libinia* is armed with six, and sometimes seven, spines, which are small, very short; the basilar joint of the external antennae is short, but very much developed, and always wide in front, a disposition which occurs in *Pisa*, whilst the contrary is to be remarked in *Doclea*; the second joint of these antennae is, however, very high, cylindrical, and inserted on the sides of the rostrum at a distance nearly equal from the orbit and the antennary fossæ; the third joint is rather smaller than the second, and the fourth is very slender and very short. The carapace is very small, and the whole of the antennary region is not more than half the length of the buccal frame. The external jaw-feet and the *sternal plastron* have the same form as in *Pisa*. The anterior feet are much longer than in *Doclea*, but less developed than in *Pisa*; they are always nearly of the same size as those of the second pair, and in general are much shorter even in the males; the hand is very nearly cylindrical, and has little convexity;

the pincers are rounded or truncate, and finely dented, and touch nearly throughout their length, a disposition which is rare in the *Pisae*. The remaining feet much resemble those of the *Pisae*, except that their last joint is longer, and never armed below with horni spines, as in them, the length of the feet diminishes progressively, and those of the second pair are not more than about once and a half as long as the post-frontal portion of the carapace; they are in general much shorter, and this character suffices to distinguish the *Libinia* from the *Doclea*. The abdomen is composed of seven joints in each of the sexes.

**Geographical Distribution of the Genus.**—The sea of America, as far as is known.

M. Milne Edwards divides the genus into two sections: the first consisting of species which have the anterior and external angle of the basilar joint of the external antennæ obtuse, and not prolonged beyond the level of the internal one, and the slit of the inferior orbital border very narrow in the second section. The body is entirely covered with short and brownish down, and it is about four inches in length.

**Locality.**—The coasts of Brazil.

**Habitia.** (Milne Edwards.)

Intermediate between the *Libinia*, the *Pisa*, and the triangular *Mithracus*.

**Generic Character.**—Carapace more triangular than *Libinia*; the stomachel region nearly a little developed as the branchial regions. *Rostrum* smaller and nearly large. Eyes, which are on the line of the antero-marginal line of the mouth, are high and retracted. *Buccae* and *branchiæ* much longer, and of the same height. The *post-frontal* frame of the antennary region, the *jau-feet*, the *sternal plastron*, and the *sagittal suture* are generally prolonged in the males, but are shorter in the females. There are few species known, *Habitia spinula*, has a body covered with a thin and fine down, about two and a half inches in length, and of a reddish colour.

**Locality.**—The Mediterranean.
the absence or presence of spiniform teeth on the upper border of the third, or third and fourth joints of the four last pairs of feet, &c. The first of these sections is separated into two subdivisions, dependent principally upon the rounded or triangular form of the posterior portion of the carapace. We select as an example one of the species of the first subdivision of the first section, *Pisa tetradoon*. This species is two or three inches in length, and has the body entirely covered with a kind of down and some crooked hairs: it is of a brownish colour.

**Locality.**—Very common on the English and French coasts.
Lissa chiragra.

a, abdomen of female; b, abdomen of male; c, antenna.

on the external side. Carapace rather large, especially anterily; rostrum, which is formed of triangular horns that are flattened and convergent, moderate, and leaving the insertion of the moveable stem of the external antennæ completely visible; front large; orbits directed a little forwards; edges not spiny, and with a single fissure above. External edge of the basillary joint of the antennæ straight, and separated from the external portion of the orbit by a very large notch. The third joint of the external jaws-feet a little dilated outwards. Feet disposed as in Pisa, except

that the four last pairs are longer, and have no spaces on the inferior surface of the tarsus.

Example, Hyas coeretata, Leach. The carapace of the species is strongly contracted beneath the external orbital angles. Length about two inches; colour yellowish.

Locality.—English Channel.

Naxia. (Milne Edwards.)

Establishing, in the opinion of M. Milne Edwards, the passage between the genera Lissa and Chorinus of Leach. General form of the body as in Pisa and Lissa, and the disposition of the rostrum very analogous with that where a proper to Lissa. Naxia is however distinguished from the preceding genera by the disposition of the antennæ and orbits. Carapace nearly pear-shaped, rostrum much resembling that of Lissa. Orbits very small, nearly circular, deep, and marked with a fissure above and below, but without any hiatus at their inferior border. Basillary joint of the external antennæ wide but narrow forwards, very much advanced, and completely hidden by the rostrum and the anterior angle of the superior orbital border; the moveable stem of these appendages inserted under the rostrum near the antennary fossæ, and not beyond the edge of the external border of that prolongation, as in Pisa. Epistome very large.

Example, Naxia serpulifera, Pisa serpulifera, Edwards. Length about four inches; body covered with a brown down, and the carapace often incrusted with flustræ, serpulæ, sponges, and the like.

Locality.—New Holland.

Naxia serpulifera, one-third its nat. size.

a, under side of the head in detail; b, one of the protruding pores. c, eye in profile; d, abdomen of the female.

Chorinus. (Leach.)

Carapace longer and narrower than it is in nearly all the Maenns; but, in general form, not differing much from Pisa. Rostrum formed of two great pointed baspiral horns. Eyes retractile, and the oribles directed outward and downwards; but the lower wall of these cannaæ is very incomplete. Basillary joint of the external jaws-feet, their moveable stem inserted under the rostrum, and a great part, concealed by it. Epistoma, jaws-feet, sternum, plastron, and abdomen, disposed nearly as in Pisa. Abdomen feet longest, especially in the males, and the chela is curved forward, dentilated and pointed, but a little hooked out into a sort of gutter. The succeeding feet are cylindrical; those of the three last pairs of moderate length, but
The second pair are very long: in the male they are in general one and a half or even twice as long as those of the third pair.

M. Milne Edwards divides the species of this genus into two sections; the 1st, consisting of those which have the superior orbital border scarcely marked, and formed by three spines, the anterior one very large, and the two posterior rudimentary; the 2nd consisting of those species which have the superior border lamellose and advanced.

We select as an example Chorinus Heros, the only species of the first section. Length from two to three inches, or rather more; rostrum, sides of the carapace, and four last pair of feet hairy; colour yellowish red. Location.—The seas of the Antilles.

Chorinus Heros (reduced one-half).

Mithrax. (Leach.)

Carapace always a little convex above, and a good deal narrowed forwards; disposition of the different regions as in the other Oxyrynchus. Rostrum bident, generally very short, and separated from the internal canthus of the eyes by a rather considerable space; orbits nearly always armed with two or three spines at their superior border, one at their external angle, and one or two at their inferior border. Latero anterior borders of the carapace spiny, or at least toothed. Internal antenna bent a little obliquely outwards, and the frontal portion of the partition which separates them armed with a recurved spine. Basiliary joint of the external antenna large, and nearly always armed forwards with two strong spines. The second joint of these appendages is, on the contrary, narrow and cylindrical, and inserted on the sides of the rostrum, nearer the antennary fossa than the orbit; third joint nearly as large and as long as the second; the terminal and articulated stem rather short. External jaw-feet presenting nothing remarkable; external plectran nearly circular. Anterior feet generally, in the male, longer and stouter than that of the second pair, the hand or claw always stout and convex, the pincers distant at their base, enlarged at the end, deeply hollowed into a spoon-shape, and terminated by a semicircular trenchant edge. Feet of the second pair about once and a quarter as long as the post-frontal portion of the carapace; the succeeding feet gradually shortened; the tarsi short, hooked, and often armed with some points at their inferior surface. Abdomen generally formed of seven joints in both sexes; but sometimes only four are to be perceived in young females, the second, third, fourth, and fifth segments being soldered.

M. Milne Edwards remarks that Mithrax establishes some connexion between the family of the Oxyrynchus and that of the Cyclometaoptes.

Geographical Distribution of the genus.—The seas of America for the most part, where some of the species attain to a considerable size.

M. Milne Edwards divides the genus into two sections:—the first consisting of those species which have the superior edge of the orbit armed with strong spines; the second, of those which have the superior border of the orbit unarmed.

The first of these sections is further subdivided into two subgenera, the first subgenus consisting of those triangular species whose four last feet are not spiny; and the second subgenus, of those transversial species whose four last feet are armed with spines. The second section contains the third subgenus, consisting of the depressed species.

We select, as an example, a species illustrative of the first subgenus, Mithrax dichotomus. Size, about two inches; colour, yellowish. Location.—Coasts of the Balaeric Islands.

Mithrax dichotomus.

a, under part of the head; b, abdomen of the male; c, termination of one of the posterior feet.

Paramithrax. (Milne Edwards.)

Establishing, in the opinion of M. Milne Edwards, the passage between Mithrax and Maia.

General form of the carapace very closely approaching that of the triangular Mithracus. Rostrum formed of two stout horns, and considerably less wide than the front, which, in its turn, has nearly as much extent as the buccal frame. Orbits oval-shaped, their upper border arched forwards as in the Maia, and with three strong spines posteriorly separated by two notches more or less deep; their inferior border widely notched or incomplete. Eyes retracted, with slender peduncules, which are rather long and curved, as in the Maia. The antennary region and antennary pits resembling those of the Maia. Basiliary joint of the external antenna large and armed with spines, one of which (the external) advances in general beyond the border of the front, and separates the orbit from the insertion of the moveable stem, which is not covered by the front. External jaw-feet and sternum nearly as in the Maia. Anterior feet of moderate strength, and terminated by adapted and rounded claws, which are not dentilicate as in Pies, nor hollowed into a spoon-shape as in Mithrax. The succeeding feet are cylindrical, very little or not at all spiny, and of variable length, according to the species; there are no small horny points at the lower end of the last joint, as in most of the Mithracus.

Geographical Distribution of the Genus.—Australasia.

M. Milne Edwards divides Paramithrax into two sections:—the first consisting of those species which have the orbits very incomplete below, and whose eyes do not reach to the external angle of the cavities; the second, of those whose orbits have only one notch below, and whose eyes, when turned back, touch the external orbital angle. Para

Mithrax Perontii is an example of the first section, and P. Gigantard of the second.

Maia. (Lamark.)

This genus was established by the author of the 'Animal sans Vertebres,' for the reception of the genera Inacchus and Parthenope of Fabricius, or, in other words, for all the Oxyrynchus properly so called. More modern authors have cut the Lamarkian genus down to the group formed by the small number of species which may be arranged in close approximation to Maia Squinado.
Carapace about a fourth longer than it is wide, and much narrower anteriorly; its upper surface is rough, with a multitude of tubercles and spines, and the regions are not strongly marked on it; rostrum horizontal, and formed of two divergent horns; the lateral anterior border of the carapace armed with strong spines; orbits of an oval shape, rather deep, and with their superior border, which is elevated and rounded anteriorly, divided behind by two fissures. Internal antennae exhibiting nothing remarkable, but the portion of the front which separates their fossaces or pits is prolonged into a strong curved spine, which is directed downwards. First joint of the external antennae very large, and constituting more than half of the inferior floor of the orbit, which it only exceeds anteriorly a very little; its extremity is armed with two stout spines, and carries the succeeding joint at its superior and external bords, so that the movable stem of these appendages springs in the internal canthus of the eyes. Epistome wider than it is long; buccal frame the same. Second joint of the external jaw-feet prolonged a good deal, from the internal side. Sternal plastron nearly circular, and its median stature, although sufficiently long, only occupying the last thoracic ring. First pair of feet not a great deal shorter than the others, slender, nearly cylindrical, and terminated by a claw, the fingers of which, nearly styli-form, are never hollowed into a spoon-shape nor dilated towards the extremity, and present few or no dentilations. Length of the second pair hardly exceeding once and a half the width of the carapace; the succeeding feet gradually shorter; their terminating joint is styli-form, and presents neither spines nor dentilations on its inferior border. Abdomen consisting of seven distinct joints in both sexes.

Geographical Distribution of the Genus.—The seas of Europe.

Example, Maia Squinado. Body covered with hooked hairs; length four or five inches; colour reddish.

Locality.—The British Channel, the oceanic coasts of Europe, and the Mediterranean.

This species is often dredged up, and the fishermen sometimes eat it, but its flesh is not much esteemed. It was considered by the ancients to be endued with reason, and was by them represented suspended from the neck of Diana of the Ephesians, as an emblem of wisdom. It is also figured on ancient coins and medals.

Maia Squinado (reduced).

a, female; young; c, abdomen of female; d, abdomen of male; e, antenna; f, pedipalp.

Micippa. (Leach.)

Post-frontal portion of the carapace nearly quadrilateral, slightly convex, rounded backwards, and hardly narrowed anteriorly; its fronto-orbital border is straight and very wide, and its lateral borders are armed with spines. Rostrum lamellar, and directed vertically downwards so as to form a straight angle with the axis of the body and the epistome. Orbits placed above and on the sides of the rostrum; at their superior border a deep slit; ocular peduncles retractile, rather long, narrowed in the middle and prolonged to the extremity of the corneas. The stem of the internal antennae in bending back remains vertical, instead of becoming horizontal, as in nearly all the other brachyurous crustaceans. The basial joint of the external antennae very large, and wider in front than it is behind; the second joint of these appendages is inserted against the edge of the rostrum, at a considerable distance from the orbit. The third joint of the external jaw-feet is extremely dilated on the external side, and very deep, notched at the point where it articulates with the succeeding piece. Sternal plastron nearly circular. Foot cylindrical and of moderate length, there being little difference in size and length between the first and succeeding pairs.

Abdomen consisting of seven distinct joints in both sexes.

Geographical Distribution of the Genus.—The coast of the Indian Ocean.

Example, Micippa Philypna. Length about two inches; colour yellowish.

Locality.—The Indian Ocean and the coasts of the Isle of France.

Micippa Philypna.

Cricocerinus. (Guerin.)

The principal characters of this extraordinary genus are found in the disposition of the orbits and of the eyes. The orbitary cavities have nearly the form of a long and tubular tube directed outwards; but they do not shut the eyes as in Perciera, for the ophthalmic ring advances nearly to their extremity, and the ocular peduncle, which is long, slender, and like that of Maia, is inserted so as to be completely exposed, and to be capable of reflection backwards and of applying itself throughout its length against the external border of the basial joint of the external antennae, a position in which it is concealed under the post-orbital spines of the carapace.

Example, Cricocerinus superciliosus; Cancer ecuareus (Herbst). Length eighteen lines.

Locality unknown.

Cricocerinus superciliosus.

Paramicippa. (Milne Edwards.)

Approaching nearly to Micippa. Carapace nearly as wide as it is long, rostrum bent back below, and the latero-anterior borders armed with teeth. Disposition of the external antennae nearly the same as in Micippa, except that the second joint, which is placed on the same level as the upper part of the front, is flattened, enlarged, very sharp, and triangular or heart-shaped. The disposition of the eyes is very different, for they cannot be reflected backwards, and there is no post-orbital orbital cavity; their re-
MaI 301

301 in but is large covered soldered little the the the extremely the sometimes Abdomen large rostrum [21x104]rostrum [22x87]border equal, prolongation, the the orbital Taurus, the the tron, of border under front of the filled in more situation that brownish. 

Locality.—

Pericera. (Lateille.)

Bearing much resemblance to Pisa, but differing from that genus in many characters, and especially in the disposition of the orbits. Carapace very much elongated, and more or less triangular, a little convex and unequal above. Rostrum horizontal, and formed by two great conical horns. Front very wide, and occupying nearly twice as much space as the base of the rostrum. Orbits circular, very small, and extremely deep, directed outwards, and entirely filled by the ocular peduncles, which are enclosed therein as in a sheath, scarcely proceed beyond it, and cannot be reflected forwards or backwards; their upper border is very much produced, and presents a fissure. The basilar joint of the external antennae is very large, and presents nearly the same dispositions as in Micippa, for it is much wider in front than it is behind, and terminates by a very extensive transversal border, which is soldered to the front or the sides of the rostrum. The position of the moveable stem of the external antennae varies a little; sometimes it is inserted under the rostrum, sometimes a little outside the lateral border of that prolongation, but always very near the antennary fossa, and very distant from the orbit. Disposition of the external jaw-feet, as well as that of the external plastron, the feet, and the abdomen, nearly the same as in Pisa.

Geographical Distribution of the Genus.—The seas of the Antilles, as far as is yet known.

M. Milne Edwards divides the genus into two sections. The first, consisting of those species in which the anterior angles of the superior orbital border are prolonged into a strong spine, which much exceeds the basilar joint of the external antennae; the second, of those species which have the terminal tooth of the basilar joint of the external antenna going much beyond the anterior angle of the superior orbital border.

We select as an example, Pericera cornuta, M. Edwards; Carinae cornuta, Parma; Cancer cornuda, Herbst; Mota Taurus, Lam.; Horned Crab, Hughes, who describes the whole animal as 'covered with brownish plushy hairs.' Length from three to four inches.

Locality.—The seas of Barbadoes, and the Antilles.

Pericera cornuta (reduced one-fourth).

Stenocorpa. (Latreille.)

Approaching Pericera, the principal difference being in the disposition of the eyes. Carapace narrow, very unequal, and furnished posteriorly with a large triangular prolongation, which covers the insertion of the abdomen; rostrum formed of two stylet and divergent horns; upper border of the orbit armed with a horn analogous to that of

the rostrum, but directed more obliquely. Ocular stems delicate, immovable and very projecting; internal antennae presenting nothing remarkable; first joint of the external antennae much longer than it is wide, the second slender, and inserted under the rostrum a little in front of the level of the eyes. Epistome nearly square, and the third joint of the external jaw-feet directed towards the external anterior angle. Feet slender and cylindrical; in the female those of the first pair are hardly stouter than the others, and are much smaller than those of the second pair. Abdomen of the female composed of five joints only, the three rings which precede the last being soldered together. Neither Herbst, Latreille, M. Guérin, nor M. Milne Edwards appears to have examined a male.

Only one species, Stenocorpa cervicornis (Latr.), Cancer cervicornis (Herbst), is known. Length from about two to three inches.

Locality.—The Isle of France.

Stenocorpa cervicornis.

a. Under side in detail; b, termination of one of the first pair of feet; c, termination of one of the succeeding feet.

Menemithus. (Milne Edwards.)

With much of the habitat of Pisa, and establishing the passage between that genus and Halimius. Carapace about once and a half as long as it is wide, very much narrowed anteriorly, and of the form of a triangle rounded at its base. Rostrum formed by a large pointed process, which is placed on the median line of the body, and occupies about a third of the total length of the carapace. The anterior angles of the orbits surmounted by a large pointed and horizontal tooth directed forwards; the borders of these cavities without fissures, and exactly surrounding the base of the ocular peduncle, which is short and but little movable. The disposition of the external antennae, of the external jaw-feet, and of the thoracic feet, the same as in Pisa, except that there exists on the lower surface of the tarsi two rows of horny points. The abdomen of the male composed of seven distinct joints; that of the female of five only, of which the penultimate is formed by the soldering of three rings.

Example, Menemithus Menemithus. Length about ten lines; rostrum fringed with hairs; colour brownish.

Locality.—The Red Sea and the Indian Ocean.
Haliimus. (Latreille.)

M. Milne Edwards looks upon this genus as establishing the passage between the Euryponds, the Pissus, the Monastith, and the next genus.

Carapace, including the rostrum, about once and a half as long as it is wide, and convex above. Rostrum advanced, and formed of two divergent horns; superior orbital border projecting, and the latero-anterior borders of the carapace nearly always straight, and armed with strong spines. Eyes not retractive, and exceeding considerably the edges of the orbit, which is prolonged backwards with a groove which represents the post-foraminary portion. First joint of the external antenna very long, straight, and nearly of the same width at its extremity as at its base; the insertion of the moveable stem of these appendages not covered by the rostrum. The epistome very large, and nearly square. Third joint of the jaws-feet strongly dilated outwardly. Ptyergostomial regions very small. Anterior feet slender and of moderate length in the male as well as in the female. The succeeding feet long, slender, and compressed; their penultimate joint enlarged below, and truncated like a subcheliform claw. Abdomen of the male composed of seven segments; that of the adult female of five.

Geographical Distribution of the Genus.—The East Indian Ocean.

Example, Haliimus Arius. Length about an inch.

Acanthonyx. (Latreille.)

Carapace nearly as elongated as in Haliimus, but less convex and much less spiny. Rostrum horizontal and formed of two flattened and divergent horns. Orbits circular and occupied entirely by the base of the ocular peduncle, which passes beyond them remarkably. Disposition of the antennae, of the epistome, and of the jaws-feet, nearly the same as in Haliimus. Feet short and stout; those of the four last pair very much compressed; fifth joint enlarged below, notched near the end with a hairy tooth, anagen which the finger is bent back in manner of a claw; both of the second pair show this structure most clearly.

Epialtus. (Milne Edwards.)

Establishing in some respects, according to the opinion of M. Milne Edwards, the passage between Docira and Acanthonyx, but much more nearly approximated to the latter. Carapace longer, more or less compressed, longer than it is wide, regularly convex and smooth above. Rostrum narrow, triangular, and little or not at all divided; latero-anterior borders of the carapace very short, and forming with the lateral borders a very open angle. Eyes very short, and not projecting much beyond the orbit, which is circular and with entire borders; but the eyes nevertheless appear susceptible of being recurved a little backwards. Antennary region very small; moveable stem of the external antenna inserted under the rostrum, at a considerable distance in front of the orbit, and the basilar joint of these appendages nearly triangular and very narrow at its extremity. It would seem to form the whole of the lower orbital wall. The second joint of these antennae is a little enlarged and nearly twice as long as the third. Epistome small and square; external joint large and their third joint nearly square, not sensibly enlarged externally, and only a little notched at its anterior and internal angle, where it joins to the succeeding articulation. The normal plastron nearly circular. Anterior feet rather strong, and the claws slightly spoon-shaped. The succeeding feet cyllindrical, and on their penultimate joint a small serrated tubercle more or less projecting; their last joint is furnished below with two rows of small spines, and has but little flexibility; the tubercle is only well apparent in the posterior feet. The second pair are much longer than the others. Segments of the abdomen varying from six to seven in the male.

Geographical Distribution of the Genus.—The coast of Chili, as far as is yet known.

Example, Epialtus tuberculatus. Length three or four lines; colour brownish yellow. Locality.—Chili.

Leucippa. (Milne Edwards.)

M. Milne Edwards sees in Leucippa much analogy to Acanthonyx, and he is of opinion that the former establishes in some points a passage between the Maian and the Forthonyx.

Carapace resembling that of Eurynome, save that instead of being unequal and beset with spines as in them, its surface is perfectly smooth; its length exceeds its width a little, its anterior portion is nearly triangular, and its latero-anterior borders are projecting and treonchate. Rostrum horizontal, projecting, very wide, and formed of lamellar horns. Orbits incomplete, so that the eye can be hid therein completely; the superior border of these cavities is straight, and goes to rejion the base of the 4th tooth from the latero-anterior border of the carapace, so as to form a triangular notch; the external edge of the basilar joint of the external antenna constitutes the internal portion of their inferior wall or partition; but backwards and below they are limited by nothing, and it may be said there is no post-foraminary portion of the orbit. The feet are small and carried on a very short peduncle; when they are folded backwards they only reach a little beyond the transversal line, and they are applied on the angle of the latero-anterior border of the carapace. The first joint of the external antenna is straight throughout its length, the second and the third are completely hidden under the ram.
tum, and this last is nearly twice as long as that which
precedes it. Epistome not very much developed. Externl
ornament with their third joint very much dilated
outwards, and slightly truncated at its anterior and internal
angle. Feet short, compressed, and surmounted nearly through
their length by a racemose crest. Abdomen in the five
male composed of seven segments, and covering the whole
of the sternal pleura: that of the male unknown.

**Geographical Distribution of the Genus.** This form, as
far as is known, belongs to the Pacific Ocean.

The only species known, Leucippa penagena, is about
four lines in length; colour pale grey (female).

(Histoire Nat. des Crustacés, &c.)

MAIKOV, BASIL IVANOVITCH, a Russian author
who gained some distinction by his talent for comic poetry,
was born at Jaroslav, in 1725. Although he had received
but a very ordinary education, which his Maimbourg
verses and a turn for humorous satire enabled him to dis-
tinguish himself by his *Yelisei*, or Bacchus Enragéd, a
burlesque poem in five cantos, the hero of which is a *yamash-
shit*, or catter, who, with his soft foot, is employed in
his protection. It is chiefly by this production that Maikov
is now remembered; but the fiction itself is so extravagant,
and the narrative in many parts so confused, as to detract
considerably from the pleasure afforded by the humour dis-
played in the masques. He also wrote two poems in a
similar vein: one entitled *Igrok Lombera*, or the L'Hom-
bre Player; the other, *The Most Shocking Fall of the Poets*;
each of which is in three cantos. His other works consist
of two tragedies and several tales and fables. To these last-mentioned productions the epithet *Moral*, pre-
fixed to them by the author himself, can hardly be said
to belong, for one of them at least is most scandalously inde-
cent. There is considerable grossness in many parts of
*Yelisei*. Maikov died at Moscow in 1776, but the first
collection of his poems did not appear till 1809, when
they were published in one volume, at St. Petersburg.

MAIL (from the French *maill*, strictly 'the mesh of a
net,' but applied in a collective view to defensive armour
formed of such meshes, as also in a more figurative sense,
dictionary, translates *maille* 'a little iron ring.' Mail or
malle was also the name given to a bag or small sack,
at first probably because made of net-work; since applied like-
wise to the portmanteau or portmanteau.

MAIL, C O A T O F (also denominated the Haulberk or
Habergoon), armour for the body, of which there were two
types, one called chain-mail, the other plate-mail. Chain-
mail consisted of a number of iron rings interlaced, each
ring having four others inserted into it, the whole exhibiting
a kind of net-work already described. Mail, with round meshes
Plate-mail consisted of links of metal-like scales, fastened
down to a strong quilted linen or leathern jacket. [Ar-
mour.] Compare also Grose's *Milit. Antiq.,* vol. ii.; Meyrick's *Critical Essays into Antiquities*, London,
1824; and his *Observations on the Body Armour antiently
worn in England,* and *Upon the Lorica Cutena of the
Romans,* in *Archæology,* vol. xix., pp. 129-145, 335-352.

MAIM (in law, 'mayhem') is an injury done to the body
of another, which is most generally committed by a man,
whether serviceable in a fight, as means either of defence
or offence, and permanently disabling him from offering such
an effectual resistance to further attacks upon his person as
be otherwise might have done; as if a foot, hand, or finger,
or a joint of the foot or hand, be struck off or made crooked
or weakened, or if a bone of the head be removed, or a fore-
tooth broken or displaced, or if an eye be beaten out, or if
any other bodily injury be inflicted whereby the party is
rendered incapable of making a vigorous defence. But
destruction of a jaw-tooth, of an ear, or of the nose, or of
other members, the loss of which does not interfere with
the means of defence or offence, does not amount to may-
hem. The distinction however is by statutory alterations
in the law rendered of little importance.

Mayhem was formerly punished by inflicting the same
privation upon the offender which he had caused to the
party injured. It was afterwards punishable by fine and
imprisonment, as an aggravated trespass. But now, by
Wm. IV. and 1 Vict., sect. 85, to stab, cut, or wound, if
with intent to murder, is a capital felony, and if with intent
to main, disfigure, or disable, is a felony punishable by trans-
portation for life or for the term not less than 15 years, or by
imprisonment not exceeding three years.

Consequently with these proceedings in the name of the
crown, for the purposes of public justice, the party in-
jured is entitled to compensation in the shape of damages,
to be recovered by a writ of *Mayhem' or, where the damages
found by the jury are not commensurate to the injury
sustained, the court may increase them upon inspect-
ion of the mayhem.

**MAIMBOURG, LOUIS,** born in France in 1620, en-
tered the order of Jesuits, and studied theology at Rome.
On his return to France he was employed as a preacher.
Having published, in 1662, a work in which he defended
the principles of the Gallican Church, *Moral, Politique, et
Historique de l'Eglise de Rome,* the pope caused him to be ex-
communicated from the order of Jesuits. Louis XIV. on this
case occasion gave him a pension, and he retired to the abbey
of St. Victor at Paris, where he died in 1696. The four propoi-
sitions of the Gallican Church, taken by the French clergy,
maintained, are: 1. That the pope has no authority in temporal matters. 2. That the general coun-
sels of the church are superior to the pope. 3. That the pope
may err in his decisions, which are subject to the approbation of the church. 4. That the rights, usages, and
canons established in the Gallican Church cannot be
altered by the pope without the consent of the clergy and
the state.

Maimbourg wrote several works on church history, the
principal of which are: 1. *Histoire du Pontificat de St.
*Histoire du Calvinisme,* which has been criticised by
Bayle and others; 4. *Histoire de l'Arianisme,* 5. *Histo-
ire des Iconoclastes,* 6. *Histoire du Luthéranisme,* in
which he defends indulgences in their fullest extent, as
remitting not only the temporal penalty, but the penalty
hereafter, both to the living and the dead; 7. *Histoire de
la Ligue.*

Maimbourg is often prejudiced and inexact, but his style
is attractive; and several of his works are not destitute of
merit. Voltaire, no favourable judge, said of him that he
had been too much praised at first, and too much neglected
aferwards.

MAIMONIDES, or more properly MOSES BEN
MAIMON, one of the most celebrated of the Jewish
Rabbis, was born at Cordova in Spain, about A.D. 1131 or
1133. He studied philosophy and medicine under the cele-
brated Avroees, an Arabian physician and philosopher,
and also paid great attention to mathematics and natural
science, as far as they were known at that time. In addi-
tion to a knowledge of Hebrew and Arabic, he is also
said to have been acquainted with Greek, and to have studi-
ed the writings of the most celebrated Grecian philoso-

In consequence of a violent persecution having arisen
against his master Avroees, Maimonides withdrew to
Egypt, where he was employed as a physician by a jeweller
who was working at the trade of a jeweller. His great merits
afterwards introduced him to the sultan Alphadat, who ap-
pointed him physician to his own household, and treated him
with distinguished honour. He died in Egypt at the age of
70.

The learning and abilities of Maimonides have been uni-
versally acknowledged both by Jews and Christians,
although the independent mode of thinking which charac-
terised most of his writings, as well as his rejection of some
of the favourite absurdities of the Hebraic, rendered him
an object of suspicion and dislike among many of his con-
temporaries. The Rabbis of Montpelier in particular
attacked his opinions with the greatest vehemence, and
censured his writings in public, and condemned them by
most of the Spanish Rabbis. The controversy con-

Sed. 1327, when the celebrated David
Kimchi was chosen by both parties as an arbitrer of the dispute.

The most celebrated of the writings of Maimonides are:

1. *Mishneh Torah*, or 'Teacher of the Perplexed,' originally written in Arabic, and translated into Hebrew by his disciple Samuel Aben Tibbon. This is perhaps the most valuable work of Maimonides, it contains an explanation of difficult passages in the Old Testament, as well as of types, allegories, &c. The original Arabic has not been printed; but the Hebrew translation has been published at various times; the best edition is by Solomon Ben Alcubi of Seville, a disciple of Maimonides. This has been translated into Latin by Justinian, bishop of Nebio, Paris, 1529, and by the younger Buxtorf, Basel, 1629, with a preface, which contains an account of the life of Maimonides. Dr. Townshend has published an English translation under the title of 'The Reasons of the Laws of Moses, from the "More Nochomim" of Maimonides,' London, 1827.

2. *Perush Ha-Mishna*, or 'Commentary on the Mishna,' which was also originally written in Arabic, but has been translated into Hebrew by many Rabbis, and has usually been published with editions of the 'Mishna.' Surenhusius, in his edition of the 'Mishna,' Amst., 1698-1703, has given a Latin translation of this work. Part of it was published in the original Arabic by Moses Ibn Azizi, of Damascus, in 1795.

3. *Yad Hazakot*, or 'The Strong Hand,' which contains a complete digest of the Hebrew laws. It is written in remarkably good Hebrew. The best edition is that printed at Amsterdam, 1792, 4 vols. fol. 4. *Yad Ha-Mishna de-Rabbi Eliezer,* a commentary on the above work, was published at Worms, 1329, and Jena, 1540.

Maimonides also wrote several other treatises on different points of the Jewish law, and many works on medical subjects. He also translated, at the command of the sultan of Egypt, the works of the ancient Hebrew physician Avicenna, or Ibn Sina.

Maimonides founded a college at Alexandria for the instruction of his countrymen, in which he delivered lectures on philosophy and Jewish law.

MAINE, UPPER AND LOWER. (BAYARIA.)

MAINA, a district of the Peloponnesus, which occupies the south-west part of the ancient Laconia, extending along the range of the Taygetus to Cape Matapan. The inhabitants of this mountainous district were never subjected by the Turks, but lived in a kind of savage independence, often making incursions into and plundering the neighbouring districts occupied by the Turks: some of them also scorched the sea as pirates. Their chief, who was hunted as an outlaw, but had been rescued from his pursuers by the council of the primati, or heads of the principal families. The number of the Mainiotes has been variously stated, by some as high as 40,000. Thierras (De l'Etat actuel de la Grèce) states the eparchy of Maina to contain 20,000 souls; but this includes mostly the southernmost part, or rocky peninsula between the Laconian Gulf and that of Corus; but the name of Mainiotes was given in general to all the mountainous part of West Laconia. They are not so well known though not very docile ones, of the new kingdom of Greece.

MAINE, one of the provinces into which, before the Revolution, France was divided, was bounded on the north by the duchy of Normandy; on the east and south-east by the districts of Chartres, Dunois, and Vendômois, portions of Orfhanais, and Touraine; on the south by Anjou, and on the west by Bretagne. Its length may be estimated at 113 miles from east to west; its breadth from north to south at about 59: its area may be estimated at 8886 square miles. It contains 1460 parishes, and 370 towns, and in the central and western parts by the Sarthe and its branches. It was subdivided into Haute (or Upper) Maine in the centre, Bas (or Lower) Maine in the west, and Le Perche in the east. The chief towns are Le Mans, Mayenne, and Mortagne: Le Mans was considered to be the capital of the whole province. Le Mans is now for the most part divided into the departments of Sarthe and Mayenne, except Le Perche, which is for the most part assigned to the department of Sarthe. Some portions are included in the departments of Eure and Eure et Loir.

Le Mans derives its name from the Auleric Cenomani, one of the Celtic tribes which inhabited it. They possessed the central and eastern parts: the Dablintini (perhaps another division of the Auleric) occupied the north-western parts: the Arvii, the south-western; the Saii or Eraci, a small portion of the north-eastern; and the Cornaces, another small portion of the extreme east. The Aurelian Cenomani were among the nations who filled the north of Italy with a population of Gauls. Le Maine was among the earlier conquests of the Franks, who established here a kingdom of their own, which extended from the Loire to the confines of England. The troubles of the province during its government and that of his sons, induced Henry I, his youngest son, to cede the province (A.D. 1100) to Hilde de Fléeche, a rival claimant, on whose death (A.D. 1119) it came to the hands of Anjou. On the accession of Henry II, count of Anjou and Maine, to the duchy of Normandy (A.D. 1151), and subsequently to the crown of England as Henry II. (A.D. 1154), Maine again became part of the English possessions in France. On the confiscation of these by Philip II. Augustus, the county of Maine was granted by that prince (A.D. 1204) to Berengere or Berserina, widow of Richard I. of England, on whose death it probably reverted to the crown, and was granted by Louis IX. (Saint Louis), together with the county of Anjou, to his brother Charles, count of Provence. Under Philippe VI. de Valois, who had inherited it before he came to the throne of France, it was reunited to the crown; but Philippe, shortly after his accession, invested his son Jean with the crown of Maine and Anjou. In the reign of Louis XI., his son and successor, the crown of Maine was conferred on him on his second son Louis, who subsequently became count of Provence and king of Naples, in whose hands it continued for some time. In 1440, René, who possessed the counties of Lorraine, Provence, Anjou, and Maine, bestowed the last upon the college of Charity, and the chief towns of Maine were given to that of Mayenne. The county of Maine was once more reunited to the crown, from which it has never since been permanently alienated.

MAINE ET LOIRE, a department in the west of France, bounded on the north by the Loire and Mayenne, on the north-east by that of Sarthe, on the east by that of Indre et Loire, on the south-east by that of Vendée, on the south by that of Deux Sèvres, on the south-west by that of Vendée, and on the west by that of Loire Inferieure. The form of the department is irregular. Its greatest length is from east by north to west by south, from between Le Lude and Château La Valière to the junction of the little river Divate with the Loire, 77 miles; the greatest breadth, at Angers, is 51 miles; but this is reduced to 24 miles by the river Bocage. The chief towns are Le Mans, 30 miles from Angers; Le Mans is once more reunited to the crown, from which it has never since been permanently alienated. Angers, capital, is in 47° 26' N. lat. and in 0° 33' W. long., 161 miles from Paris in a direct line, 178 miles by the road through Chartres and Le Mans.

The department has no mountains, but there are very high hills. The high lands which separate the basins of the Vilaine and the Loire occupy a small part of the north-western border, and the southern part is overgrown by the long growths of the heights of Gâines, which bound the Loire to the west. The department consists of low hills covered with vineyards, or of gently undulating plains, divided by ditches and quick hedges, and adorned with clumps of trees. The soil gives variety and beauty to the landscape. The east is separated from the department by the Sullon, which encircles the Paris basin: a belt of land in the centre extending across the department, first south-west along the eastern bank of the Sarthe to its junction with the Mayenne, then along the middle of the Sullon and the Mauns, and is occupied by the formations which make the chalk and the saliferous sandstone: the western side is occupied by the primitive rocks. The whole department is included in the basin of the Loire, which river crosses it from east to west. It extends the department just below the junction of the Vilaine and
There are thirty-four cantons, or districts, each under a justice of the peace.

In the arrondissement of Angers are, Angers (pop. in 1831 28,933 for the town, 32,743 for the commune; in 1836 33,901 for the commune) [Angers], on the Mayenne; St. Mathurin, Les Ponts-de-Cé, Savenières, St. Georges, and Ingrandes, on the right bank; Le Pellerin, Rochefort, and Chalonne, on the south bank of the Loire; and St. Aubin, on the Layon. St. Mathurin is in one of the pleasant parts of the valley of the Loire, and consists of about 400 houses, the greater part of which are on the north side of the road from Tours to Angers, the opposite side of the road forming a kind of terrace immediately above the bank of the Loire. The town of Les Ponts-de-Cé, formerly written Ponts-de-Saône or Sée, takes its name from one of its streets, the Ponts de Saône, which extends across the river four miles in length, the current of which is kept by a dike of masonry. The houses on each side the causeway form the town, which comprehends two parishes, forming one commune, with a population of 2490 for the town, or 3243 for the commune. The town, or commune, is divided into two districts, the lower or right bank, and the upper or left bank, the foundations of slate, and are in a very dilapidated condition; they do not however present any marks of great antiquity.

Near the south end of the bridge, on an island of the Loire, rises the ruins of a Roman causeway; and some two miles in length across the arms of the Loire and the islands encircled by them. There is a vast space on either side of this causeway where the floods of the Loire, and in the spring, before they are regulated, have often debouched. The houses on each side the causeway form the town, which comprehends two parishes, forming one commune, with a population of 2490 for the town, or 3243 for the commune.
are chiefly boatmen and weavers: the latter make serge for home consumption, or handkerchiefs for the merchants of Cholet. Black marble is quarried near the town.

In the arrondissement of Baugé are, Baugé (pop. in 1831, 3433 town, 3353 whole commune; in 1836, 3400 commune), and Beaufort (pop. 3296 commune, or near the Cosson [Bauzé]; Beaufort; Longué (pop. 1577 town, 4491 commune), and Vernantes, on or near the Latan; Durtal (pop. 3465) on the Loir; Moranne, on the Sarthe, and Jarsé. Durtal or Dureuil has the remains of an old castle built by Franche-Comté, now Roux, consisting of two towers, having a parapet with machicoulis. The other parts of the castle are of later date. There is a good stone bridge of five arches over the Loir.

In the arrondissement of Beaupréau are, Beaupréau (pop. in 1831, 2141 town, 2045 whole commune) Lo May (pop. 3315), and Montrouvart, on the Evre; Jallais (pop. 3163) on a small feeder of the Evre; St. Florent, on the south of the commune of the Loire; Maurelier, La Tessouaille, Chollot (pop. 4657 town, 7345 whole commune) Chollot, and Laval (pop. 2120) more in the neighbourhood, or near the south bank of the Loire: Roziers, on the north bank; Brissac on the Loubay; Passavant, Neul, Les Verches, Doué (pop. 2479), Maugis, Chauvigny, Thourance, Rablay ou Rablais, and St. Lambert, all on or near the Loire, Montrouvart Belloy (pop. 1812 town, 1907 whole commune) Courdoy, and Puy Notre-Dame on, or near the Thou; Vihiers, Corson, La Salle, and Gonnord. In the old abbey of Fonteviart, Henry II. and Richard I. kings of England, found a place. Daudé has remains of the priory of King Dagobert; the ruins of what some have regarded as a Roman amphitheatre hollowed out of a calcareous rock, others as an old ruin of a palace of the kings of Aquitaine; a handsome fountain, and in the neighbourhood, on an east-west line. On the south bank of the Loire below Saumur are the entrenchments, in good preservation, of a camp supposed to be Roman, forming a vast but irregular polygon approaching to an oval. Fragments of Roman pottery and medals of different emperors, found in the vicinity, monuments, in the vicinity, and round the camp are many vestiges of tombs. At Gennes on the south bank of the Loire, a little lower down, are some other Roman antiquities, and especially the ruins of an aqueduct.

The arrondissement of Saugé are, Segré and Lo Lion d’Angers, on the Oudon; Pouancé, near the source of the Vèrèze; Candé, on the Erdre, a stream which belongs chiefly to the department of Loir et Cher; and Châteauneuf, on the Sarthe. Segré is a small place, consisting of a few rows of streets or lanes, in a slanting out of the way of any great thoroughfare, and from the badness of the roads scarcely accessible. The population of the town is probably little more than 800; that of the whole commune is given in 1836, only 2130. One Lion d’Angers is agreeably situated on the right bank of the Oudon, which is here navigable, a little above its junction with the Sarthe. It is a well built town, favourably situated on the road from Laval to Angers, with a population probably of 2500, and has some iron-works, with a population probably of about 2000.

The population, where not otherwise specified, is that of the whole commune, and from the returns of 1831.

The manufactures of the department comprehend salt-works, glass and various kinds of coarse, coarse linen cloths, and woolen stuffs, cotton yarn, paper, leather, and wax candles. There are also mills or presses for walnut, lime, and other oils. Trade is carried on in corn, tobacco, wine, brandy, vinegar, paper, cattle, slate, marble, and coal.

The department constitutes the diocese of Angers, the bishop of which is a suffragan of the archbishop of Tours. It is in the jurisdiction of the Cour Royale and the circuit of the Académie Universitaire of Angers, and in the military division, the head-quarters of which are at Tours. It returns seven members to the Chamber of Deputies.

In respect of education this department is very backward: of every hundred young men enrolled in the military establishment only 30 are from the department. The average of France being thirty-nine.

This department originally formed part of the territory of the Andecavi or Anges, north of the Loire; and of the Pictonies, south of that river. In the subdivision of Roman times the former was included in the first, and the latter in Aquitania Secunda. The chief town of the Andecavi was called at first Juliomagus: afterwards, from the name of the people, Andos or Andecavi, the modern Angers.

The British provinces claim an appoinlement in the Marches of the Roman province of Locris, and of the territory of the St. James, and its tributaries were west of the boundary-line of New Brunswick (67° 5' W. long.), which is considered by the British as belonging to Canada. This disputed tracts are between 46° and 45° 30' lat., and 66° 5' and 67° 7½' W. long. The boundary of these tracts, the state of Maine from 43° 5' to 46° 30' lat., and between 67° and 71° W. long. Its greatest length, from south-south-west to north-northeast, is about 270 miles; and its greatest width, from east to west, about 160 miles. Its surface may be computed at about 22,000 square miles, or between 2400 and 2600 square miles less than the area of Ireland.

Coast, Surface, and Soil.—The coast-line extends along a straight line 236 miles. The southern portion, as at Casco Bay, is rather high, but the remainder of the coast is an abrupt declivity into the sea, and is landlocked by a chain of islands. So far as the coast trends from south-south-west to north-north-east, the mainland runs nearly west and east; but numerous long peninsulas stretch out from it towards the sea, which are divided from each other by narrow and deep inlets, which form excellent harbours. These bays are famous for the variety and abundance of the fish caught in them. The point, Longe Point, or George’s Point (44° N. lat.) and the Fox Island, 10 miles northward, to the mouth of the Penobscot river, are nearly in a northern direction. It contains numerous wooded islands, some of which are considerable, as Long Island, the Sheep Head, and the Deer Head, which are three in breadth, Fox, Deer, and Haut islands. The remainder of the coast-line, from Penobscot Bay to Passagudiquity Bay, resembles the coast west of Penobscot Bay consisting of an alternation of promontories and indentations; but the former are commonly wide, and the latter do not run so deep into the mainland. The most extensive bays are Frenchman’s Bay and Machias Bay. From Father’s Bay is formed on the west side by the large island called Mount Desert Island. The approach to the entrance is through a narrow channel, formed from the mainland, which is also rendered difficult by numerous rocks and small islands. Though the coast along this shore is very full of islands in winter, and the numerous islands favour the formation of ice, the harbours are commonly open all the year round: the strength of the tides, which exceed 24 feet, preventing their being closed up. The country gradually from the shore, but rather rapidly, which is a pro\a long way from the entrance of the river only a few miles, especi\a southward. The surface of the state is mountainous; but it is only in the north-east part, where the hills rise to the height of mountains. The mountain-region may be considered as divided from the mainland by a line beginning on the south on the basin of Casco Bay, and running straight, by the mouth of the Penobscot river (44° N. lat.; 67° W. long.), and following north-eastwards towards the extreme of Moose-Head Lake, from which point extends east to the place where the west or main branch of the Penobscot river unites with the Mattawawuck river.
East of this branch of the Penobscot the mountains recede northwards to about 46° N. lat. The region to the west and north of this line is full of high hills and mountains, of which the highest, Mount Katahdin, rises to more than 5330 feet. These hills, though mostly isolated, occupy a considerable surface, perhaps one-fourth of the region, and about as much is occupied by the lakes. The lowest part of the region is probably formed to the extent of the surface of the lake, and few, if any, settle feet, have formed it, except at the southern extremity, in the valley of the Androscoggin, where the hills are of moderate elevation. This region occupies more than one-fifth of the area of the state.

The remainder of the state is occupied by the hilly region, which is well drained by numerous rivers with a rapid course. Swamps are of rare occurrence in this part and of moderate extent, except along the banks of the Matawancook and the Forty Mile Creek, which run between 115° east and 90° west. Along the sea-coast, and from ten to twenty miles inland, the soil is of moderate fertility, and frequently intersected with sandy and sterile tracts; but beyond this region the soil improves, and produces plentiful crops of grain, flax, and hemp.

**Rivers and Lakes.—** The rivers in the southern district have a short course. The principal are the Piscataqua (New Hampshire), the Saco, and the Presumpscot, or Casco. The two latter rise on the southern and western declivity of the range north of Mount Katahdin, and unite about 90 and the Presumpscot about 60 miles. The latter traverses a large lake called Sebago Pond, and falls into Casco Bay, a short distance north of Portland.

East of Casco Bay is a deep indentation which receives the waters of the north as far as the Androscoggin and the Kennebec. The Kennebec rises in several branches on the eastern declivity of the mountain-range which separates Maine from Canada: these branches, some of which have a course of 40 miles, unite in Moose-Hound Lake on the south side, and flow 20 or 30 miles to the south, with a breadth varying from five to 20 miles. From the south-western side of this lake the Kennebec issues in a large stream, and the general direction of the remainder of its course is to the south, but with considerable deviations to the west and north. The Androscoggin, after a course of about 180 miles, though its course is obstructed by falls and shoals, like that of the Androscoggin, it is of great importance in the transportation of lumber. The tide ascends to Augusta, 70 miles from the open sea. Kennebec Bay, in which the Androscoggin and the Kennebec unite, stretches more than 20 miles farther south, being formed by the long peninsula of Phippsbury on the west, and by numerous islands on the east.

The branch of Penobscot river is numerous. All the waters which descend into the bay and lagoons of the high land which forms the southern border of the St. John's river, between 68° and 70° W. long, flow into the Penobscot. The principal branch is the western, which flows from the mountains between the Androscoggin and Chesuncook Lake, from the southern extremity with which it issues with an eastern course. Skirting the southern declivity of Mount Katahdin, it enters Bamedurapcok Lake, and after leaving the lake unites with the north branch and the Matalawkeag, two large rivers which come from the north. At the point of its junction with these two rivers it turns by degrees from an east-south-eastern to a south-western course, in which direction it continues to its junction with the Piscataqua river, a large stream which falls from the mountains, and has a course of about 240 miles. It enters Bangor, 30 miles from the bay, and 60 miles from the open sea. Penobscot river is more navigable than the Androscoggin; its waters are navigable for 150 miles above Bangor, except its rapid current, and it is much used for the transport of lumber.

From Penobscot Bay to that of Passamaquoddy, a distance of 100 miles along the margin of the ocean, no large river empties itself into the sea. The last remarkable river is the St. Croix, or Saco, which forms the boundary-line in this part between the United States of North America and the British colony of New Brunswick. Its nearest sources are a number of lakes, curving from north to east, and forming, in length about 40 miles; they are known by the name of Grand or Chippuntaticook Lake. The river issuing from the lake, called also Chipunaticook, runs southward until it unites with the outlet of another series of lakes called the Saco lakes. Hence its course is to the southeast, but with some considerable bends. It enters Passamaquoddy Bay after a course of about 140 miles. Passamquoddy Bay is of a very irregular form, extending upwards of 20 miles from the mouth of the Saco river to Quoddy Point; on the side of Maine it forms a bay of considerable extent, called the Penobscot Bay.

**Climate.**—The winter is very severe. From the 1st of November to the 1st of April the ground is covered with snow, and the rivers and lakes with ice. The summer on the sea-shore is very hot. The thermometer frequently rises to 90°, and even 96°, and yet the heat is subject to sudden and great changes. Drought is frequent. The mean temperature is about 42°, or about eight degrees less than that of London. In the year the thermometer rises to 115° or 120° in the sun. In the interior of the hilly region the weather, though often warm, is much more regular. Little is known of the climate of the mountain region. The climate all over the state is healthy; but perhaps the swampy district on the north-east must be excepted.

**Productions.**—A very dense forest covered Maine in its natural state, and still spreads over the greatest part of it, the settlements being yet restricted to a comparatively narrow zone along the sea-coast. These forests, consisting of pine, spruce, fir, and hemlock, are cut down, and grey oak, constitute the principal wealth of the state; timber being its staple. The cultivated fields do not occupy one-twentieth part of the surface. Indian corn, which constitutes the principal food of the inhabitants, thrives well as far as the north of Augusta. There is a narrow belt of farm land, which lies farther north it does not ripen. Other articles cultivated in this state are wheat, rye, barley, oats, peas, hemp, and flax. The fruit-trees of northern Europe thrive very well, especially pears and apples, as well as most of our vegetables. The lumber is less numerous, and afford articles of exportation. Deer were formerly abundant; wolves, bears, beavers, foxes, and squirrels are still common. The sea abounds in fish, especially cod; and the rivers and lakes are full of fish, especially salmon; large trout are common in the lakes.

Maine, so far as it has yet been explored, is not rich in minerals, but iron-ore occurs in several places.

**Inhabitants.**—The population amounted, in 1820, to 297,439, but had increased in 1830 to 398,460; which gives about 18 individuals to a square mile. More than one half of that number is occupied in the forests, cutting the timber, and preparing other articles for exportation, as potsash, pitch, &c. Many families along the sea-coast obtain subsistence by fishing. The inhabitants wear coarse cloth and coarse homespun, and onjournal and some of the rivers there are numerous saw-mills to prepare the timber for the market, which is floated down the rivers.

In the northern part there are still some few natives, who live mostly on the coast of the ocean and in the lakes. Their numbers seem not to exceed one thousand. The most numerous are the Penobscots, who occupy the upper and part of the central valley of the Penobscot river, in which fish abound.

**Political Geography.**—Maine is divided into ten counties and 300 "towns," a term which is equivalent to townships. The capital is Portland, situated on a promontory in Casco Bay, south of the mouth of Presumpscot river. It has a large and safe harbour, which is seldom frozen over. Many vessels are built on it; and the sea-cargo is sent by the most numerous, and afford articles of exportation. Deer were formerly abundant; wolves, bears, beavers, foxes, and squirrels are still common. The sea abounds in fish, especially cod; and the rivers and lakes are full of fish, especially salmon; large trout are common in the lakes. Their numbers seem not to exceed one thousand. The most numerous are the Penobscots, who occupy the upper and part of the central valley of the Penobscot river, in which fish abound.

Bowdoin College, at Brunswick, on the banks of the Androscoggin with 2000 inhabitants.
agogg, 26 miles from Portland, was incorporated in 1796. It is well endowed and has a good library. A medical school, in connection with the college, was established in 1820. There is also a college, founded by the Baptists in 1820, at Waterville on the west branch of the Kennebec; and there are also Normal Schools at Bangor and Rockland. The Gardiner Lyceum, at Gardiner, was established "for the purpose of giving to farmers and mechanics such a scientific education as may enable them to become skilful in their professions." 

Every town is by law required to raise such funds, for the support of common schools, a sum equal at least to 40 cents for each person in the town, and to distribute this sum among the several schools or districts, in proportion to the number of scholars. A sum raised by a tax on banks is also appropriated to the support of education.

Commerce.—The exports consist chiefly of the produce of the forests, as timber, lumber, boards, and potash, and of dried fish, beef, pork, and grain. From the 1st of October, 1852, to 5th of September, 1853, their value amounted to $9,187,187; foreign produce exported to the amount of $30,644,182, is to be added to this amount, making a total of $1,019,831. The imports amounted in the same year to $1,386,306, and consisted mostly of manufactured articles from Europe, and salt, tea, and other staples from the West Indies, especially Cuba. This state possesses a larger amount of shipping than any other state in the Union except Massachusetts and New York.

History.—It appears that Maine was discovered by one of the Cabots in 1497. It was first visited by Frobisher, who sailed the southern part, west of the Kennebec river, Maine, and the eastern part Acadie. In the beginning of the 17th century the English attempted to make some settlements in the southern district, and succeeded about 1635. The first charter was proprietary, and granted in 1639 to Sir Ferdinando Gorges; but in 1652 Maine was united to Massachusetts, under the title of the county of York. In 1636 Massachusetts bought the country from the French, and from that time it was considered by the English that she had the sole right of account of the eternal disputes between the English and French, until in 1712 England obtained its full possession by the peace of Utrecht. Massachusetts opposed the attempts of the inhabitants to separate Maine and Massa- chusetts, and in 1719 it gave permission to the forests of Maine to decide this important question, and the majority of votes being in favour of a separation, a constitution was formed and adopted, and in 1820 Maine became an independent member of the Union.

The legislature consists of a Senate and House of Representatives, chosen annually by all the male citizens of 21 years of age and upwards. The executive is in the hands of a governor, who is chosen annually. Maine sends two members to Congress, and seven to the House of Representatives at Washington.

(Darby's View of the United States; Warden's Account of the United States of North America; Pitkin's Statistical View of the Commerce of the United States of America.)

MAYNOTES. [Maina.]

MAINTENON, FRANCOISE D'AUBIGNE', Mar- quise de, was born at Nort in 1635. Her father, Cois- tain d'Aubigné, son of the friend of Henri IV. (Ac- cording to the Memoirs of the Marquise of Brissac, he was a man of noble birth and of fine character. He was in prison at Nort at the time of the birth of his daughter; he afterwards went, with his wife and child, to the West Indies, where he died in 1645. His wife and daughter returned to France in a state of destitu- tion, and had to be supported by the Marquise d'Aubigné. The Marquise, after being a nun, and educated in the Calvinist communion, which was that of her paternal relatives. After her mother's death, her godmother, Madame de Neulliant, took her into her house, and made her become a Catholic. Her situation however at Madame de Neulliant's became unpleasant and humiliating, that she was glad to leave it by marrying Scarron, the comic poet, a man witty but old, infirm, and deformed, who felt for her the interest of compassion. Scarron's heart was frequently touched by fashionable company, and among whom Madame Scarron, by her pleasing conversation and address, made several friends. When Scarron died in 1660, her widow was left poor; but some of her friends recommended her to Madame de Montespan, the mistress of Louis XIV., as governess to her children by the king. She thus be-

came known to Louis, who gradually conceived great esteem for her, especially for the care which she bestowed on the Duke of Maine, one of his sons. The king made her a present of 100,000 livres, with which she purchased the estate of Maintenon. Madame de Montespan's temper was that of the mild and condescending; she never endeared herself to the impresario. Louis himself was often obliged to interfere to restore peace. By degrees the king, who had grown tired of Madame de Montespan, became more strongly attached to Madame Scarron, whose conversation was not inferior. The king always instructed her in the school of adversity, great forbearance and much tact. The king at length conferred on her the title of Marchioness of Maintenon. The queen consort of Louis was now dead; Louis was no longer young, and she felt the want of an in- stigator and instructress, which she found in Madame Scarron, and Chinese in her own thoughts. Having consulted his confessor, Father Le Chaise, the latter advised a private marriage; and in 1682, Louis, who was then forty-seven years of age, was secretly married to Madame de Montespan, who was fifty years old, by the archbishop of Aix, an absence of the king, a witness, Madame Chaise and two more witnesses. The marriage was always kept secret, and Madame de Montespan herself never avowed it. Louis however lived openly with her, visited her several times a day, received her ministers, and asked her advice upon state affairs. Without appearing to seek any political power, but rather professing to shun it, she undensely exercised great influence over the king in the latter part of his life. She was of a general disposition, and ascribed to her by common report, and she was looked on by many faults committed by the cabinet. But it would be very difficult to discriminate between those acts in which she really had a share, and those in which her influence might be only imaginary. Madame de Maintenon has been unjustly dealt with by many writers, and by St. Simon among the rest. She was ambitious, but not interested, arrogant or vain; she was fond of religious discussions, and she exerted considerable power over the conscience of Louis. She is said always to have kept her peace, and to have stood that humility was a Christian virtue. Madame de Main- tenon is still favourably remembered as the founder of the institution or school of St. Cy, for the education of poor girls of good families. In the latter years of Louis' life she was made unhappy by his friendship and beneficent per- son, and the fits of passion to which he was subject. Is one of her letters she complains that "she was obliged to please and amuse a man who would not be pleased or amused. After the death of the king she retired to St. Cy, where she died in 1712.

(Lettres de Madame de Maintenon, 6 vol. Paris, 1812; Lettres inédites de Madame de Maintenon, Paris, 1826; Lemoyne, Essai sur l'Establishissement de l'Académie de St. C, Paris, 1826, vol. 1.)

MAINTENANCE is defined to be when a man main- tains a suit or quarrel to the disturbance or hindrance of right, and if he who maintains another is to have by agree- ment part of the land or debt, &c. in suit, it is called Chumperty. Maintenance was a subject of several statutes. By the 32 Hen. VIII. c. 9, no person shall bargain, buy or sell, or by any means obtain any pretended rights or titles to any lands, until he has brought suit, or his ancestor, or by whom he claims the same, has been in possession thereof, or of the reversion or remainder thereof, or has taken the rents and profits thereof, by the space of a year next before the bargain or sale, on pain of the seller forfeiting the latter value; the above, therefore, is the rule for the buyer, knowing the same, also forfeiting the value of such lands. The professed object of the statute was to prevent the inequities, oppression, and vexation which the preamble mentions as the consequence of the buying of titles and pretended rights of persons not being in posses- sion of the lands sold.

A man may assign his interest in a debt after he has in- stituted a suit for its recovery, and such assignment of itself does not maintain. But if the assignment be made on condition of the assignee giving the assignor any indemnity against the cause of the suit, already incurred or to be incurred, this makes it maintenance.

(Conyn's Digest, Maintenance.)
MAINEZ, or MENTZ, or in French Mayence, the Roman Magnesiacum, or Moguntiacum, is the capital of the province of Rheinhessen in the grand-duchy of Hesse-Darmstadt. It is situated in one of the most beautiful and fertile parts of Germany, on an elevated bank of the Rhine, a little below the junction of the Main and Ilm rivers, a town of a hill, and it also occupies a long slip of land on the banks of the river: 50° 8' lat. and 11° 1' E. long. Being connected, by a bridge over the Rhine, with the strongly fortified vil-
lage of Bonn, by Frederick Christopher, a French general, to the south of a hill, and it also occupies a long slip of land on the banks of the river: 50° 8' lat. and 11° 1' E. long. Being connected, by a bridge over the Rhine, with the strongly fortified vil-
lage of Bonn, by Frederick Christopher, the grandson of Cardinal Friesly, who was the first bishop. Some however affirm that Mainz has had 114 bishops and archbishops, from Crescens, who was said to be a disciple of St. Paul, and suffered martyrdom, A.D. 103, to Papal instituted; in 1562 he became the capital of the French department of Montserré, and it is ceded to the grand-duke of Hesse.

The remarkable men born at Mainz are the Minnesinger Frau-enlob, and Gutenberg the inventor or improver of the art of printing, in the 15th century. The old city is named, and contains a statue erected at the expense of the Cappella. The population of Mainz is 32,000, of whom about 2600 are Protestants, 1700 Jews, and the remainder Roman Catholics.

(M. K. Curtius. Geschichte und Statistik von Hess; Werner, Der Dom von Mainz, and Schickelse der Stadt Mainz, &c.; Hassel, Stein, Cannabich, &c.)

MAIRE, JAMES LE, was the son of a merchant es-tablished at Edinburgh, near Alkmaar, and born about 1596. His father, THOMAS MAIRE, was a able merchant, about that time, had obtained a declaration from the states-
general, by which every Dutch vessel not belonging to the company was prohibited from doubling the Cape of Good Hope. The latter part of the 16th century, and in the year 1614, Horn formed a joint-stock company for the purpose of trying to effect a passage to the East Indies without doubling the Cape. Among those was Isaac Le Maire, the father of James. Two vessels were equipped for sea; the command er, and his brother, was given to Le Maire, a Dutchman, of Austrian, Prussian, and Hessian troops. This garrison in time of peace consists of 6000 men. The military gover-
orest, who retains his post five years, is alternately an Aus-
man and a Prussian general. It has been objected to this great fortress, that it is too extensive, as it requires for its defence a garrison of 30,000 men.

Mainz is on the whole an old-fashioned and ill-built town. The streets, with three or four exceptions, are narrow, crooked, and gloomy, though there are many handsome pros, and a collection of modern statues: it has 27 squares and market-places the principal is the Parade, which is surrounded with avenues of trees. Of the 11 churches, of which only one is for the Protestants, the most remarkable are the cathedral, the church of St. Ignatius, which is considered as one of the most magnificent in Germany; St. Peter's church, and St. Stephen's. The cathedral, founded in the twelfth century, has frequently suffered by fire. It is 350 feet long, 140 wide, and has 14 altars and 20 chapels. It was begun in 1250, and finished in 1278 by French in 1793, and under the government of Napoleon it was intended to pull it down, but it has since been gradu-
ally repaired. Nothing however remains of the great trea-
ure which it formerly possessed, or of its library, and even many of the fine monuments have been destroyed. The public edifices, we may mention the magnificent grand-ducal palace (formerly the house of the Teutonic order), the arsenal, the palaces of the commandant and of the vice-
governor, the episcopal palace, the new theatre, &c. A gymnasium, that is to say, the ancient university, is in bad repair, and there are several schools. The city library consists of above 90,000 volumes, and in the same building there are cabinets of medals, and of natural history, a collection of philosophical and mechanical instruments, a gallery of pic-
tures, which always used to be in the great hall. The city was first traversed by the Dutchmen Le Maire and Schooten in 1616, from the former of whom they received their name.

MAISTRE, A. and L. [Port Royal]

MAITLAND, SIR RICHARD, of Lethington, son of William Maitland of Lethington and Thirlestane, by his wife Martha, daughter of George, second lord Seaton, was born in the year 1496. Having completed his grammar educa-
tion, he proceeded to the university, at that time the home-
port of the young men, particularly for the study of the law. On his return to Scotland he was successively employed by King James V., the regent Aran, and Mary of Lorraine. Of the early part of his life however few par-
ticles are known, his name being connected with that of "Reports of the Decisions of the Court of Session"
MAITLAIRE, MICHAEL was born in France, 1688, of Protestant parents, who settled in England at the reversion of the edict of Nantes. Maittaire was educated at Westminster School under Dr. Budworth, and afterwards obtained an education at Oxford, where he afterwards went, a warm friend and patron in Dr. South. He took his degree of M.A. in 1694, and from 1695 to 1699 discharged the duties of second master in Westminister school. In 1699 he resigned that appointment and became a tutor of his late colleague in literary pursuits. He died August 4th, 1747, at the age of 79.

Maittaire was a learned and laborious scholar. He edited many of the classical authors, with useful indexes, and also wrote several works, of which the most important are—De Gregorio Eshinae, Lond., 1700, 4to; 'Historia Plantarum,' Lond., 1707, 8vo; 'Planographia,' Lond., 1713, folio; and 'Agriculturae,' Lond., 1732, folio.

MAIZE, or Indian Corn, is a plant naturally cultivated in the western world, but is commonly grown in many parts of the world as a food. It is the Zea Mays of botanists, a monocotyledonous grass, of vigorous growth, with stems not more than two feet high, but, as it grows, it is more or less tall, and hangs heavy with large, greenish-white florets, which are the flower of the plant. The leaves are large and flat, and give the plant a flattened appearance when crowded together. Each plant has a long thread-like style, which projects beyond the enclosing sheaths; and as there are several hundred of these upon one stalk, the whole form a long, tangled mass, which looks as if made of silk. The ripe grains are regularly arrayed one over the other in rows, are compressed at the sides, flattened at the apex, and of various colours.

Their most common colour is pale yellow; some are red, some party-coloured, and there are varieties with brown and even purple grains. A pair of pericarp, the hard, outer skin, the grains are very small in number, and the largest ears in America contain at least 900 grains.

This plant, in its wild state, is met with in Paraguay, according to Augustine de St. Hilaire. It was also found for the continent of North America by the European arrival there. A second species, called Corncob in Mexico, is said to occur in Chili; but little is known of it further than that the leaves are serrated, and all the parts much smaller than usual.

The plant which is of most importance is a particular line on the continent of Europe north of which the maize does not thrive. In the southern countries, which pass through Nancy, formerly the capital of Lorraine in France, it has a great messenger, supersedes wheat and rye as the common produce of the soil. In the form of bread, it is mixed with wheat or rye bread; but by mixing it in certain proportions with wheat it makes a very pleasant food. In the United States of North America, Indian corn forms almost the only bread eaten by many of the people; and in some states it is the only bread that the negroes eat. It is better in the shape of baked bread that maize is most generally used in Europe, but in boiled messes and soups in Asia, it is: it is not only the rye which was the best that the ear in every state, from that of a green vegetable to a ripe rye to a dried potato, is a substitute for cabbage or green-peas in its early state, and used in some way or other to its complete maturity. Nothing can be better than rye maize to fatten hogs or pigs with; and the young stock cut down quite green gives excellent feed for the best and most abundant varieties of green feed for cattle.

A plant which gives such a return cannot be expected to ripen its grains in poor land, or without attentive culture, for the land must be naturally fertile, or made so by art; it must be well prepared to receive the corn, and the manure must be given to recast it. A light, moist, and warm soil suits this plant best. It thrives well on land broken up from grass, as is the case with most plants. A light, sandy land is also suited to it, and the plants thinned to a considerate distance, the intervals may easily be ploughed or stirred with the horse-hoe, by which means the seeds are kept down, and the earth fertilized by exposure to the air. The seed should be taken from the largest and best heads; for in young ears the kernel should be rejected, as less perfect. They should not be taken off until the heads are baked or steamed, and then steeped in water to soften them. If the seed is baked in brine and dried with quicklime, as is nearly done with wheat, it might probably be advantageously used in the same manner to sweeten bread, as it is to sweeten but this is not often done. The desire for sewing maize the south of France is the month of April; farther north is somewhat later for fear of frost, which would entirely destroy the plant on its first appearance above ground. This is the reason why it does not until the middle of May, and it could scarcely be expected to ripen its seeds before the winter frosts set in.

The distance between the rows of maize varies from two to four feet. In good ground the latter distance has proven the best, for the ears are more or less crowded, and the stalks are slender. The stalks are of a yellowish colour, and the leaves are large and flat, and give the plant a flattened appearance when crowded together. Each plant has a long thread-like style, which projects beyond the enclosing sheaths; and as there are several hundred of these upon one stalk, the whole form a long, tangled mass, which looks as if made of silk. The ripe grains are regularly arrayed one over the other in rows, are compressed at the sides, flattened at the apex, and of various colours.

Their most common colour is pale yellow; some are red, some party-coloured, and there are varieties with brown and even purple grains. A pair of pericarp, the hard, outer skin, the grains are very small in number, and the largest ears in America contain at least 900 grains.
for the plant, and there is sufficient moisture from the impervious subsoil. This method might perhaps be adopted with advantage in England, in experiments on maize, where the situation admits of its cultivation. Maize, however, sown, must be repeatedly hoed. At the first hoeing the plants which are too close together, or where weeds appear, are thinned out. When the plants are a foot high, there is a second hoeing, the weeds are then cut up, and some earth drawn around them, which raised above the stems. The reason of this is, that there are several joints very near each other at the bottom of the stem, and from each of these fibres strike out into the soil which is brought into contact with it, and form additional roots to the plant. This is a great advantage in a dry season. When the flowers are ready to expand, a third hoeing is given, to kill weeds and open the surface of the soil slightly. The earth which is raised around the stems should be flattened a little at top, and even slightly hollowed; all those that are very late down to cut in dry seasons. If any tillers or shoots appear from the bottom of the stem, they should be carefully removed, as they diminish the nourishment which should go to the main stem. A fourth hoeing and earthing up, at the time when the maize is about six or eight inches high, like garlic, are said to be very advantageous. It is generally concluded that this mode of unnecessary expense. In many countries they sow or plant various vegetables in the intervals between the rows of maize, of which the most advantageous are turnips and cabbages, which may be sown or planted between the maize after hoeing. These crops, as beans, except they be dwarfs, are not so proper, as they shade the maize and prevent its maturity. In warm climates cucumbers and melons are often raised there. In Carolina, where they hoe maize only twice, a running weed springs up rapidly called goosefoot; this also that are very late down to cut in; and as they shade the maize and prevent its maturity. The male flowers, just as they expand, are excellent food for cattle; the old are used in many ways; but cut in great quantity, it is not too likely that the whole crop will be in flower in ungenial weather. The male flowers, just as they expand, are excellent food for cattle; the old are used in many ways; but cut in great quantity, it is not too likely that the whole crop will be in flower in ungenial weather.

MAJOR, a field-officer next in rank below a lieutenant-colonel, and immediately superior to the captains of troops in a regiment of cavalry, or the captain of companies in a battalion of infantry. His duty is to superintend the exercises of the regiment or battalion, and, on parade or in action, to carry into effect the orders of the colonel. The major has also to regulate the distribution of the officers and men; he is also in the care of the horses, and whenever he has a temporary charge of the horses appertaining to any individual of the corps, in the event of the absence or death of such individual. This class of field-officers does not appear to have existed before the beginning of the seventeenth century; and, at this time, such officers had the title of serjeants-major, a designation borne at an earlier time by a class corresponding to that of the present majors general of an army. (Grose, vol. i., p. 243.)

No mention is made of either lieutenants-colonel or majors, as field-officers in the account of Queen Elizabeth's army in Ireland (1600). But Ward, in his Animadversions of Warre (1639), has given a description of the duties of this latter class, in his regiment of any particular branch, from which it appears that those duties were then nearly the same as are exercised by the present majors of regiments. They are stated to consist in receiving the orders from the general commanding the army; in conveying them to the colonel of the regiment, and subsequently in transmitting them to the officers of the companies; also, in superintending the distribution of ammunition to the troops, and in visiting the guard by day or night. A brigade-major is a staff-officer who performs for a brigade, or in an army, the duties corresponding to those of a major in a regiment or battalion. The prices of a major's commission are,—

In the Life and Royal Horse Guards ... £350; daily pay £1 4 5.
In the Dragoons ... 4575 ... 0 19 3.
In the Foot Guards (with the rank of colonel) ... 8300 ... 1 3 0.
In the regiments of the line ... 3200 ... 0 16 0.
MAJOR-GENERAL. [GENERAL]

MAJOR, or MAIR, JOHN, was born at the village of Cleghorn, near New Lanark, about the year 1740. He appears to have studied for a short time both at Oxford and Cambridge, but he always regarded the university of Paris as his true alma mater, whither he proceeded in 1763, and where he attached himself successively to the colleges of St. Martin, of Montaigu, and of St. Sulpice. Having been made a doctor of the Sorbonne in 1765, he betook himself to the teaching of the scholastic philosophy, or divinity, in the college of Montaigu, and in this department soon came to be reputed one of the most distinguished of the scholastics. The unorthodox writings indeed have been rated by Dupin and others in later times as the ablest that have come down to us from that age.

In 1769 he returned to his native country, and officiated for some time as one of the regents or masters in St. Salvator's college, St. Andrew's; but a dispute with some of his colleagues soon induced him to go back to Paris, and there he remained till 1798, when he was induced once more to return to St. Andrew's, which he never afterwards left. He became eventually provost or principal of St. Salvator's college, and appears to have died in that office about the year 1830.

Major's works are all in Latin, and the principal are Commentary on the Four Books of Seneque, some theological expositions and commentaries on parts of the Scripture, and his History of Scotland, entitled "De Historia Gentii Scotorum, seu Historia Majoris Britanniae," first printed in 4to, at Paris, in 1521. The style of all his writings is as correct as that to be expected, but his History appears to have the merit of being a faithful and thorough chronicle of events, so far as he knew them. It is however as little marked by any spirit of critical or profound research as by a greater purity of diction. Both this and some of his philosophical and historical works are remarkable for the copious extracts from Major's works, which evince the liberal comprehension of his opinions. The well-known epigram of Buchanan however, in which he designates him "Solo cognomine..." (that he was the greatest scholar and wit had no very high opinion of the intellectual endowments of his old master).

MAJORCA. [MALLORCA]

MAKRI. [ANATOLIA]

Makri, from his full name, Taki-eddin Abu-Mohammed Abul-Abbas Ahmed Almakri, a celebrated Arabic writer, was born at Cairo between A.D. 1358 and 1359. His family originally lived in one of the suburbs of Cairo, called Makra, whence he derived the surname by which he is usually known. We have very few particulars of his life; but it appears that he resided at Cairo during the greater part, if not the whole of his life, that he discharged at different times the duties of several public offices, and that he died in an advanced age, in A.D. 1442.

Makri wrote several historical works, of which copious extracts are given in De Sacy's Arabic Christomathy. The most important of these works is his "Description of Egypt," which gives an account of the history of the country from its remotest antiquity, as well as a description of its natural history and antiquities, both of the country and of the manners and customs of the inhabitants. De Sacy, in his notes added to his translation of Abd-Allatif, published under the title of Relation de l'Egypte, Paris, 1810, has given many interesting quotations from the work of Makri.

The only works of Makri which have been printed are, as far as we are aware: "Historia Monete Arabicae," in Arabic; and, on land, by Tychenor, Rostock, 1739, of which a French translation, much superior to the Latin one by Tychsorn, was published by De Sacy, under the title of "Traité des Monnoyes Musulmanes," Paris, 1799. A correct account of the Mohammedan Princes in Abyssinia," by Raimund Lull, Leyden, 1791; "Lettre de l'Expedition des Grecs de Francisque aversus Dymahsal ab A.C. 709 ad 1221 sus-


MALABAR, a province of Southern India, lying between 10° 20' and 12° 20' N. lat., and between 75° 14' and 8° 55' E. long. It is about 118 miles, and its breadth does not in any part exceed 20 miles: its area is about 7520 square miles. It is bounded on the north by Canara; on the east by Coorg, Wynad, and Coimbatore; on the south by the territory of the Cochin; and on the west by the Molucca Sea.

As to its general features, Malabar may be divided into two portions. One of these, which is by far the most extensive, consists of low hills separated by narrow valleys. The hills have in general steep sides and are crowned by perpetual snows; but the precipices have been washed away, the surface is formed into a series of terraces. The summits of many of the hills are bare, especially towards the north, where they exhibit little besides small rock. The soil in the valleys is fertile, the sandstone from the hills, and is extremely fertile. The other portion of the province consists of a level plain or belt along the coast, seldom more than three miles wide, and often not so much. The soil is sandy and poor, but being intersected by numerous mountain streams it is admirably adapted for the cultivation of rice. The whole of the province lies immediately below the western ghautas.

The pepper-vine grows most abundantly along the whole coast-line of Malabar, and its produce forms the chief article of export from the province. It is sent to Europe, but large quantities are also exported to China, or conveyed by native traders to Arabia and the north-west countries of India. Sandal-wood, which is another principal article of export from Malabar, is produced in the province, but the trade is not so large as the western ghautas. Jaggery, a coarse kind of sugar, is made in large quantities from a species of palm, the "brom-palm," and is commonly sold at a very low price, less than half a shilling per hundredweight. Part of the coast is covered with forest, and the produce of which a revenue is drawn by the government.

The province is divided for the purposes of internal government into 2212 villages, which do not however consist, as in most other parts of India, of aggregations of houses, but rather of territorial divisions answering more to our parishes. The dwellings of the natives are for the most part scattered over the face of the country. Almost the only collections of houses are found in the seaports. The principal of these are Tellichery, Malabar, and Cheppatt. Tellichery is in 11° 43' N. lat., and 72° 53' E. long. In 1663 a factory was established there in the presidency of Surat, for the purchase of pepper and cardamom seeds. It is still the residence of the richest native merchants, and is the principal spot in the interior; but a great part of the export trade of long years centred at Malabah, a small town and port about five miles to the southward, which was settled by the French in 1722.

Malabar is one of the few parts of Hindustan in which the ownership of the soil is recognised as belonging to individuals, and not to the supreme government. Landed property is held in this province, as well as in Canara, Coora, Travancore, and Bednore, on tenures which from time immemorial have been held by the proprietors; and it is not in our province. As in the Hindu population the distinctions of caste are kept up with the greatest scrupulosity. The distances within which an individual of an inferior may not approach one of a superior caste is very great. In the Latin or Christian names of the castes are: 1st, Nambyars or Brahmas; 2nd, Nairs or Sudras; 3rd, Tiara, who are free cultivators of the land; 4th, Malairs, who are musicians and servants (these are free also); 5th, Paliars; these are slaves and are properly below all caste; but there is an octroi
tribe inferior even to these, called Niadis. There are several subdivisions of the first three castes. The Polias are bought and sold like cattle, either with or separate from the land, one of them being generally reckoned of equal value to two buffaloes. They are often treated with severity, and are of a miserable appearance, squallid, and diminutive.

The whole province was subdued in 1760 and 1761 by Hyder, and in 1788 it was overrun by Tipoo, and the ruler of the province was declared to be a vassal. The existing viceroy, but in 1790 were reinstated by the English government, under whose superintendence the affairs of the province have much improved, the revenues have been augmented, and the trade increased. The province is under the governor-general, and is divided into three districts, and seven native states.

MALABAR LANGUAGE. [Hindustan, p. 229]

MALABATHRUM, a name which occurs frequently among the writings of the antients, and which was applied to a leaf imported from India, whence it was likewise called salet. It is probably the same as the leaves of the Indian Nand; that they are moreover found floating on Indian marshes, and that they grow without roots (ib. 11), and that roots are (ib. 10) it is by feeding on them. The oil of the opium is a singular or, the antients, becomes aromatic. In the works of the Arabs sadaj is given as the synonyme of Malabathrum; and sadaj, both in Persia and India, is applied to tej-pat, or the leaf of the tej, which is a species of Cinnamomum there, the oil of the leaves of the valleys of the Himalaya, which extend from Rangoon to the Deyra Doon in 30° N. lat. Dr. Hamilton found the same name applied to a very nearly allied species, the C. Tamaia. Both species most probably yield the leaves which are so highly celebrated by the antients, and which are still as extensively employed in eastern countries, and may be found in every Indian bazaar under the names of tej or tej-pat, or by the Arabic name of sadaj-hindes. They are analogous in all respects to bay-leaves produced by the Launario species of same name, but the leaves of the Malabar plant are larger and more aromatic. The oil is employed in the manufacture of perfumes, and other medicinal articles, and is used in dyeing textiles. The name Malabathrum no doubt is derived from Tamaia-patra, or Tamaia-leaf, as was first indicated by Garcias: 'Appell autem Indi Fomulam Talamapatram quom vocem Greci Latini immitante corrupte Malabathrum nuncupantur.'

Penang, a small island, is situated on the southern extremity of the Malay Peninsula, in 2° 14' N. lat. and 102° 12' E. long., on the straits called by its name. It is on the northern banks of a small river. The roads along the shores are good and safe. South of the town there is a small island, between which and the continent is a harbour, where, during the south-west monsoon, vessels of more than 16 feet water are secure. The bar at the mouth of the river has only water enough during high tide for boats. Many of the houses are tolerably well built, but the greatest part, which are inhabited by Asians, are composed of bamboo and mat huts. On the southern side of the river are the ruins of a fort, now converted into a public promenade.

Malacca was built in 1258, by Sri Isander Shah, the king of the Malays, after he was expelled from Singapura, a town situated on or near the site of the emporium now called Singapore. It was first visited by the Portuguese in 1507, and taken by Alfonso Albuquerque in 1511. It was then a large commercial town, and the harbour contained 900 vessels. It was a flourishing colony, and at the beginning of the 17th century, when it was taken from the Portuguese by the Dutch, upon which event its commerce began to decline, being partly transferred to Batavia. But its position on the great thoroughfare between the Gulf of Bengul on one side and the Indian Archipelago and China still gave it some importance; though the establishment of a British colony in the island of Pulo Penang, in 1786, diminished its commerce. It was taken possession of by the British in 1755, restored at the peace of Amiens, but soon afterwards taken again. In 1814 the Dutch recovered possession of it, but the British having founded the town of Singapore in 1819, which in a few years became a great commercial place, Malacca sunk to insignificance. The town and fort of Malacca, with its dependencies, were ceded to the English by the treaty between the British and Netherland governments of March, 1824.

Besides the town, this colony consists of a tract of country about 40 miles long and 30 miles wide; its surface may be about 1000 square miles. The country along the sea-coast, is of the richest kind, and in many parts swampy, and mostly covered with wood. The soil is not distinguished by fertility; and though rice is raised, this article, as well as other grain, is annually imported from Bengal. Fruits succeed exceedingly well, as carambola, lemons, oranges, &c., but there is a very plentiful and numerous cultivation of coffee has been introduced lately. Pepper is grown to a considerable extent, and 4000 piculs (1 picul = 133 pounds) are annually exported. The amount of tin annually got from the mines is estimated at 4000 piculs. There is also golly 1000 piculs.

The bulk of the population consists of Malays. There are some Hindus and Chinese, and also some descendants of the Portuguese and Dutch. In 1822 the population in the town of Malacca amounted to 12,000 souls, and in the whole colony to 22,000. After the British establishments upon it, the number decreased by emigration to Singapore, but the population has recently begun to increase, and is said to be 30,000.

(Crowford's Journal of an Embassy to the Courts of Siam and Cochinchina: Finlayson's Journal of a Mission to Siam and Hut: Notices of the Indian Archipelago, &c., collected by J. H. Moor, Singapore, 1837. [NANING.]

MALACCA. THE STRAITS OF, separate the Malay Peninsula from Sumatra. They begin on the north between Diamond Point on Sumatra and the island of Pulau Penang near the shores of the continent, about 5° 20' N. lat. and terminate on the south between the most southern cape of the Asiatic continent, the Tanyong Burus (13° N. lat.), and the islands of Caroum or Kraum (19° N. lat.). Its direction is from north-west to south-east, between 97° 30' and 103° 40' E. long. At its northern extremity it is nearly 150 miles wide, but southward it grows narrower, and opposite the town of Malacca, from which it is named, the strait is but 26 miles wide. Both shores are visible from the middle of the channel, though they are rather low. The strait preserves this width to its southern extremity. Being enclosed on the south-west and north-east by countries in which the mountain-ranges rise from sea-level, and by the uninhabited islands of the south-west and north-east monsoons, and the sea, especially at its southern extremity, is always as smooth as a pond. But when the Gulf of Bengul is agitated by the strong gales of the north-west monsoon, there is a heavy sea in the northern and eastern parts of the strait, which at that time inundates many parts of the low shores which are immediately contiguous. The countries bordering on the strait have not the periodical seasons of rain and dry weather. The deep water of the strait is round, and mitigates the heat of the atmosphere. Perhaps in part of the globe the temperature of the air less subject to changes than on these shores.

(Finlayson's Journal of a Mission to Siam and Hut; and Crawford's Journal of an Embassy to the Courts of Siam and Cochinchina.)

M'A'CHI (MO'M, 'my messenger'), the last of the twelve minor Hebrew prophets. So completely are we ignorant of the personal history of this prophet, that it has been doubted whether 'Machi' is the name of a person, or only a title descriptive of the prophetic office. In the absence of any positive proof of the latter supposition, the former must be considered as the more probable. Many of those who believe that 'Machi' is an official title identify the prophet with Ezra. This was the opinion of Jerome.

Machi evidently prophesied after the Babylonish captivity. He was later than Haggai and Zechariah, for he is not, like them, described as being in the house of the Temple, but he refers to it as already built (i. 7, 10; iii. 1, 10). In chap. i., ver. 5, he speaks of a political ruler of the people; now, no one appears to have held such an office later than Nehemiah, after whose time political power was in the hands of the priests. Moreover the state of things described and reproved in this prophecy agrees with the account which Nehemiah gives of the manners of the people...
was before him. This innocent trifling came at last viewed in its true light by some collectors worthy of employment, who put off childish things and went into the subject. Lister, Adamson, Linnæus, Poli, C. Lamarck, De Blainville, and others gave dignified and important forms, and the monster raised its proper rank; whilst the comparatively important history of the testaceous mollusks became the hands of such men as William Smith and his followers among the most valuable records by which the strata of the earth's surface are defined and demonstrated.

The Malaca of Aristotle, his Organic or Organica, and his Malacoperae, are distinguished by him from fishes as not having, like the latter, blood; which must be understood as meaning that they were without red corpuscles.

Thus the Malacidea and Organica of Aristotle, who is followed by Albinus and the Greek naturalists generally correspond with the naked and testaceous Mollusca of the moderns.

Pliny and the ancient Latin zoologists employ the same denominations as the Greeks, though they have translated them into the terms Mollia for the Naked, and Testacea for the Shell-protected Mollusks.

Upon the revival of letters, we find Belon, Rondelet, Gesner, and Albovandus adopting the denominations of the ancients; the mollusca, having continued the same under the general terms of Exanguiae and Exanguia aquatic; and the more particular ones, as applicable to the animals immediately under consideration, Mollia or Mollusca and Testacea or Conchylia.

This is done by John Ray, who has justly been called the Preceptor of Linnaeus, and whose systematic view of the subject of zoology are well worthy of the attention of the student, appears to have been the first who applied the term Vermes or Worms to all invertebrate animals (except the insecta). The exception of the circulatory fluid is white, and who employed the term Vermes (Mollusca) and Vermes (Testacea) to denote the divisions of Aristotle.

Lister, in his Synopsis Medicinae Conchyliorum, came to be regarded as having done much as a systematic and though that zoologist gave the anatomy of many molluscan animals, as had been done by Fabius Columba before him, and Willis, Swammerdam, and others after him, little appears to have been effected for a principle of classification resting on their external organization or their form, and still less for one resting on their internal structure.

Linnaeus, in his Natural Division of Animals into three sections, depending on the structure of the heart and on the circulating fluid, makes his third section consist of those animals whose blood circulates in one circuit (inurinum), and a white and cold circulating fluid (sanguis frigida, albita). This section he separated into two subdivisions: the first (Antennata) consisting of the Insecta: the second consisting of the Worms, or Vermes.

The following is his classification:—

1. Class Vermes.

The above classification and the very definitions will show how very limited the knowledge of the structure of such animals was in the time of the writer—consists of the following orders in the Systema Nature:—

MOLLUSCA.


Mouth anterior. Body perforated with a small lateral opening. 


In the above assemblage of animals we find a very heterogeneous arrangement; Mollusca, Radiata, and the genus Lernaea (which last the best authorities consider to be crustaceans), being there collected together.

The order Testacea, Testaceous simple mollusks, covered with a calcareous shell, consists of the following suborders and genera:—

TESTACEA.

* Multivalvia.


** Bivalvia: Conchæ.


** Univalvia Spiræ regulares: Cochææ.


This order embraces many of the characters resident in the shell, which is treated as the habitation of the animal. Any one who examined this method soon found that it was impossible to affix any definite idea to many of the inhabiting shells; and, but a vague one to most. To the bulk of the Bivalves or Conchæ, Tethys is assigned as the animal; to the bulk of the Univalves with a regular spiræ, a Limax or Slug, which last is stated to be the animal of Pinna among the Bivalves; and yet the water is so Limaceous appearing so nearly to a natural arrangement with the scanty materials—scanty they were when compared with the information that we now possess—which formed the groundwork of his classification. Upon this system almost all the scientific collections of Shells were arranged till within these few years; and so digested were many of the followers of this great man, who would have been the first to remodel his arrangement as new light poured in upon him, that every attempt at adopting the views of Lamarck, Landreth, and others, and even those of Bruguier, founded upon the structure of the animals, was for a long time resisted, and almost resented as a presumptuous attempt at 'genius-making.'

Daubenton had read to the Academy of Sciences at Paris a paper on the antenna of the shell, in which, whilst he admitted that an acquaintance with these alone might suffice for arrangement, he remarked that a knowledge of the animals, or soft parts, was indispensable for forming a complete system of conchology and a natural distribution of these genera. But though this indefatigable anatomist broached this opinion, he does not appear to have carried his plan into execution.

Guettard seems to have been the first who carried out the suggestion of Daubenton; for in 1756 he read a memoir in which he placed the Mollusca, Terebrata, or septa, according to sound principles, the necessity, in forming a classification of shells, of having recourse to the animals, or soft parts which they enclose, and a part of which the shells are. He did more; for he well characterized, upon the principles advanced by him, several genera, especially among the Univalvulæ, as they were then called. And although he acknowledges that his information with regard to the Bivalvulæ was not sufficient to enable him to carry out his views in the same manner with regard to them, yet he observes that he is not so likely to be. He was indisputably just by this attempt to procure a scheme characterized with reference to the animals, or soft parts, as well as the Bivalvulæ. Guettard further pointed out the division of shells into Terrrestrial, Floscallæ, and Marine, and paid particular attention to the presence or absence of the aperture. Of muscular attachment, viz., Conques and one muscular attachment, Conques with two muscular attachments, and Conques with three muscular attachments; and three depending upon the presence or absence of the nacre and its modifications.

In the animal and soft parts, of the Limacous, he directs his attention to five principal parts.

1. The tentaculum, or tentacles, which he names horns (cornes), and which he considers with regard to their number and shape as furnishing specific character, according as they are almost even, or round, or four, or five, or even to their conical or cylindrical form, the absence or presence of convexity (renelment) at their origin, and their situation at the root, or at the extremity of the head.

2. The eyes—their absence or presence; and in the latter case, their situation upon the head at the interival side of the root of the tentacles, behind the tentacles, towards their internal side, at the origin of the tentacles on their external side, above the root of the tentacles on their external side, at the middle of the tentacles on their external side and at the extremity of the tentacles.

3. The mouth, as provided with two jaws without a proboscis, or with a proboscis without jaws.

4. The trachea, or respiratory orifices, as formed by a single hole situated on one side of the animal, or by a long pipe which has its exit near the back.

5. The foot, according as it is divided by a transverse furrow at its anterior part, or not.

The Conques are regarded by Adamsen with reference to four principal parts:—

1. The mantle, which may be either divided all round into two lobes, or divided on one side only, or form a sac, open only at the two opposite extremities.

2. The tracheæ, or tube, which may be either single, and in the form of an aperture, double in the form of separate and distinct pipes, or double in the form of united pipes.

3. The foot null, or not appearing externally, or appearing externally.
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Akerla (bulia of modern zoologists), Argonauta, Bulla (Physa of Draparnaud and others), Buccinum (Linnaeus of the moderns), Carychium, Vertigo, Turbo, Helix, Planorbis, Ancylus, Patella, and Halioïtes.

3. Operculated univalves, in which he places the genera Trionyx, Buccinum (of Linnaeus), Trochus, Nerita, Patella, and Serripina.

The Bivalves are divided by the same author into two sections only: the 1st consisting of those which have a toothed hinge, including Terebrulina, a new genus; the 2nd, those which have a toothless hinge, including two new genera, Anoma and Pictora, which he separates from the oysters.

The Multivalves comprise the genera Chiton, Lepas, and Pholus.

There can be little doubt that it was to these authors (among whom we do not include Müller, whose works appeared separately, nor Geoffroy, who appeared nearly simultaneously) we owe the amended arrangement of Linnaeus as it finally appeared in his last edition of the Systema Naturae (the 12th, 1767), and as we have given above.

In the earlier editions the term Mollusca does not seem to have occurred to him. The naked mollusks are distributed among the order Zoophytes, of his class Vermes, and the testaceous mollusks formed his third order of that class, Testacea. Among the first we find Terebrata, under which he arranged the Holothuria; species of this order which he placed in the Hydrozoa. The second were not yet divided into Univalves and Bivalves. The genera Patella and Cochles seem to have embraced all the testaceous univalves; and Cyprea, Haliotis, and Nautilus, the single univalves anything but the Bivalves. The third order, under the term Concha; and the Ascidiaceae, under the name of Microcosmus, seem to have found a place under his Testacea.

It is in the tenth edition (1758) that we first trace considerable alteration in his system, which increased in the last that received the correction of the great Swedish naturalist's own hand, and which appeared in three volumes: the first part of the first volume being published in 1766; the second part of that volume, containing the Insecta and Vermes, in 1772; and the third, containing the animals (Regnum Animalium, 1772), in 1776. Adanson's work was published at Paris in 1757, ten years before the second part of the second volume of the Systema Naturae. But the first volume, the part edited by the labours of Guettard and Adanson to add to the genera of the orders Mollusca and Testacea of his Vermes, and to define them more closely. Geoffroy's publication appeared nearly at the same time with the last edition. The object of Linnaeus seems to have been to establish a nomenclature and form a system of conchology resting on the modifications of structure in the shell alone; in fact an arbitrary system which has now generally given way to systems founded on characters more fixed.

Pallas (Miscellanea Zoologica, 1766) seems to have been the first to point out the unsound foundation on which the system of Linnaeus rested. He shows that the subdivisions of the testaceous mollusks, as adopted by Linnaeus and his followers, resting on the shell only, have lost all the animal into consideration, is far from natural; and, in that spirit of prophecy which is now fulfilled, he remarks that it cannot be preserved.

Bruguier, nevertheless, weighing the great influence with which the Linnaean system exerted itself in general, and the powerful aid which it afforded to the student of that science, clung, in his Dictionnaire des Vies, to the method of the Swede in so many points that he may be said almost to have done little more than imitate him.

Bruguier, however, separates into a distinct order the Echinarabd and Star-fishes.

In the second order, or that of Testacea Worms, though the Linnaean principle is kept in view, the genera are more multiplied, and their characters better defined; and Bruguier is one of those authors who has greatly contributed to the advancement of this branch of zoology, we shall give an outline of his system of conchology.

The Testacea Worms into three sections, according to the number of the valves.

In the first (Multivalves) he places the Chitona, Balanus, and Anatifia (Lepas of Linnaeus), Terebrata, Patella, Pholus, Char (a new and imaginary genus), Anoma, and Crassa. We have here for the first time a separation of the Pedunculated and Scasile types of the Cirripedia (Campylosomata and Acompsotomata) pointed out under the generic appellations of Anatifia and Balanus, and the new genera Patella and Crassa.

The Bivalves (second section) are divided into the regular and irregular.
Among the Regular Bivalves are three new genera, viz. Acrodon, Placuna, and Perna.

The Irregular Bivalves contain the new genera Trigonia, Pecten (previously separated from the oysters by Müller and Fodi), Trypanites, Cardita (formed at the expense of Chama, Lethu, and Terebratula, containing a division of Anomia.

The Univalves are subdivided into the Uniliocular, or those without any partitions, and the Multiliocular, or those which are furnished with regular partitions or septa. The Uniliocular Univalves without a regular spire contain Patella and Fissurella, divided for the first time, and, notwithstanding the observations of Pallas, Dentalium, Serpula, Slitiquaria, and Aspergillum, among others; Fissurella, Siliquaria, and Aspergillum being new.

The Uniliocular Univalves with a regular spire present a less heterogeneous assemblage. We find among them Voluta reduced to a more uniform genus by withdrawing from it some of the widely different species which Linnaeus had hitherto united under that name, and the following new genera: Ovula (or rather Oulium), Oliva, Purpura, Cassis, Terebra, Pusa, Cerithium, Bulimus, Planorbis, and Natica. The Multiliocular Univalves not noticed by Linnaeus, but pointed out by Breyen or Breynius of Danzig, in his Dissertation of Polythalamia Class (1792), comprise the genera Camerina, Ambonites, and Orthoceras, at the expense of the genus Nautilus of Linnaeus.

Genus, whose edition of Linnaeus appeared about the same time with the work of Bruguière, requires but little notice. The few new genera were added to the Systema Naturale, which received in this edition a great number of species, too many of them added carelessly and in a manner to create confusion, instead of dispersing it.

In 1791 Pou published the first volume of his splendid work, Testacea urbis Romae, Tableau Historie et Anatomie. Of the care with which the details are wrought out, and the magnificence and accuracy with which they are illustrated, it is impossible to speak too highly. But this work Pou avoids the errors of those who sought to establish a system of testaceous shells on the sole foundation of a perfect organization and no other. He runs into the opposite extreme, and restricts his arrangement on the soft parts of the animal only, without going into the least part to the hard part. He divides the mollusca into three orders: Mollusca Bivalvia (Euphusia & of Linnaeus and Serpula of the same author). 2. Mollusca septantia (Gastropods of the more modern authors). 3. Mollusca subulitentia (Multivalves and Bivalves of the old school, and characterised as being propped on foot fixed to rocks or free, and always wanting a head and eyes).

Of these families the most natural are the Bivalves, and their arrangement is based on the structure of important parts. Little seems to have been done for the science from 1789 to 1809, a period during which the French revolution and its reign of terror; but in 1798 a new era commenced, and George Cuvier published his Tableau Elémentaire de l'Histoire Naturelle des Animaux. This great man, clearly perceiving that Guettard, Adanson, Geoffroy, Müller, and other authors who had written upon the same subject, they proposed the organization of the animal as its basis, adopted that method, and united, as Pallas had done, under the name of Mollusca both the Vermes (Mollusca) and Verrmes (Testacea) of Linnaeus. Considering the absence of a shell as a peculiarity of the Class in question, he divided the Mollusca into three sections,—the Cephalopoda, the Gastropoda Mollusca, and the Acanthopoda Mollusca. Finally he arranged this second Grand Division of the Animal Kingdom in six classes, and gave the following method in his last edition of the Règne Animal (1830).

MOLLUSCA.

Class I.

CEPHALOPODA.

1. Sepia of Linnaeus, containing the following genera and subgenera: Octopus, Polyplax, Eledone, Argonauta, Belcalon, Loligo, Loligopsis, Onychotethis, Sepiola, Sepiolo, and the Cutselles properly so called, viz. Sepia of Lamarck.—2. Nautilus of Linnaeus, containing Spirula, Nautilus (Lat.) Echinodoris, Echinolimulus, and Orthoceras.—3. Bellemnites, including Actinocinoma?—4. Ammonites, including the Ammonites, properly so called (Simplegades of De Montfort), Planites of De Haan, Ceritites, Orbilites, Globites, Gonites, Pelagius, Scaphites, Basulites (Tiranites, Rhabdites, Icthyoscarolites), Hamites, Turritiles (the last with M. Audouin's doubt).—5. Camerina (Nummulitides of Lamarck), with their infinity of genera. [For Ammonites.]

Class II.

PTELEOPODA.


Class III.

GASTEROPODA.

Order 1. Pulmonifera.

§ 1. Pulmonifera Terrestria.

1. Limax, including Limax properly so called. Arion. Vaginulus. Testacella and Paramecella. 2. Helix, including Helix properly so called. Vivina (Helicolemnus of Perrierus), Bulimus, Pupa, Chondrus, and Succinea. 3. Clauvina. 4. Achatina (including Polyphemus of De Montfort).

§ 2. Pulmonifera Aquatica.

1. Onchidium. 2. Planorbus. 3. Limnesus or Limnaea. 4. Physa, near which Cuvier would place Scaphodus of De Montfort. 5. Auricula, including Carychiun of De Fersac. 7. Melampus (Convolus, Lam.)

Order 2. Nudibranchiata.


Order 4. Tectibranchiata.


Order 5. Heteropoda. (Lam.)

These were all comprised by Forskau under his genus Pleurothrac, and comprehended 1. Carinaria. 2. Albatia. 3. Firola. 4. The Timorienes of Quoy and Gaimard. 5. The Monopurses of the same.

Phyllocre of Péron is placed here, but with doubt.

Order 6. Pectinibranchiata.

Family of Trochoids.

1. Trochus (including Tectus, Calcar, Rotella, Cantanb, Infundihalbus, Solenium, and Eumolus). 2. Turbo, including, as a genera and subgenera. Turbo properly so called (which comprises both Turbo and Meleagris of De Montfort), Delphini, Pleurotomaria, Turritella, Scaloria; together with certain terrestrial and fresh-water subgenera, viz.: Crervosoma, Valvata, and Paludina; and the following: Littorina, Monodon, Phasianella, Amollaria (including Lamies of De Montfort), Helicina, Melan, Rissell, Melanopsis, Pirenna, Acteon (Tornatella, Lam.), Pyriamidella, Janthina, Nerita, Natica, Peloronta, Velates, Nerrina, and Clith.

Family of Cardiula.

untu, cartilagineous as, which, with their extensive range, include Selachians, Osteichthyes, and Chondrichthyes. The Class Chondrichthyes includes the cartilaginous fish, such as sharks, rays, and chimaeras. Osteichthyes, or bony fish, are diverse and include most of the marine and freshwater fish species. Selachians, or sharks, are a class of Chondrichthyes known for their unique features such as a cartilaginous skeleton, five pairs of gill openings, and a heterocercal tail. The Class Osteichthyes includes the bony fish, which are divided into two sub-classes: Actinopterygii, or ray-finned fish, and Ostariophysi, or paddle-finned fish. The Class Chondrichthyes includes the cartilaginous fish, which are known for their ability to regulate their buoyancy through the use of swim bladders. The Class Osteichthyes includes the bony fish, which are the most diverse group of vertebrates, with over 25,000 species described. The Class Chondrichthyes includes the cartilaginous fish, which are known for their ability to regulate their buoyancy through the use of swim bladders.
Shell with lateral teeth, and covered with a false epidermis.
No lateral teeth in the greater number; rarely an epidermis, which covers the whole shell except the umbones.

**Family Cardium.**
Cardinal teeth irregular, either in their form or situation, and accompanied, in general, by one or two lateral teeth.

**Family Arcida.**
Cardinal teeth small, numerous, intrant, and disposed in each valve on a line which is either straight, or arched, or broken.

**Naiide.**
Fluvial shells, whose hinge is sometimes furnished with an irregular cardinal tooth which is simple or divided, and with a longitudinal tooth which is prolonged under the corselet; and sometimes is without any tooth at all, or is furnished along its length with irregular, granulous tubercles.
Muscular impression posterior and compound. Umbones with the epidermis peeled off, and frequently eroded.
Ustio. Hyria. Anadona (or rather Anodon) and Indana.

**Ambiguous Conchifera.**

**Family Chamaeida.**
Shell irregular, inequivalve. A single cardinal tooth which is oblique and subenclave, inserted into a little pit in the opposite valve.
Muscular impressions two, distant, lateral. External ligament depressed.

**Family Tridacnida.**
Tridaca. Hippopus.
(b) Shell longitudinal or subtransverse, with a muscular impression contracted into an isolated space without bordering the limb.
(\(^{**}\)) Ligament at the lateral border of the shell, and always entire.

**Family Mytilida.**
Hinge with a subinternal ligament, which is marginal, linear, very entire, occupying a great part of the anterior border. Shell rarely foliated.
(\(^{**}\)) Ligament at the lower border of the shell, or divided.

**Family Mollusca.**
Ligament marginal, sublinear, either interrupted by creulations or serial teeth, or altogether simple. Shell subinequivalve, foliated.
(\(^{**}\)) Ligament not marginal, contracted into a short space under the umbones, and not forming a tendinous tube under the shell
(a) Ligament internal or demi-internal. Shell regular, compact, not foliated. *

**Family Pectinidae.**
(b) Ligament internal or demi-internal. Shell irregular, foliated, sometimes papyraceous.

**Family Ostreidae.**
(1) Ligament demi-internal, shell foliated, but nevertheless often acquiring great thickness.

\(*\) The term foliated is here applied as relating to the structure of the shell itself, rather than to the external excreteresence.

(2) Ligament internal. Shell delicate, papyraceous.

Pisicula. Anomia.

(3*) Ligament either null or unknown, or represented by a tendinous chord which sustains the shell.

(a) Ligament and animal unknown. Shell very inequivalve.

Family Rudistidae.


(b) Shell adherent, either immediately or by a tendinous chord which sustains it, and serves as a ligament. Animal with two opposed arms, which are opposed, ciliated, and cirriform.

Family Brachiopodidae.

Conchifers having near the mouth two opposed, elongated, ciliated arms, rolled spirally when in repose. Mantle bilobated, the lobes separated anteriorly, enveloping or covering the body.

Shell bivalve, adhering to marine bodies, either immediately or by a tendinous chord.

Orbicula. Terebratula. Lingula.

Class XII. MOLLUSCA.

Order 1. Pieropoda.

No foot for creeping, nor arms for progress or seizing the prey. Two fins opposed and similar, proper for natation. Body free and floating.


Order 2. Gasteropoda.

Animals with a straight body, never spiral nor enveloped in a shell which can contain the entire animal; having under the belly a foot or muscular disc united to the body nearly throughout its length, and serving for creeping.

Some naked, others protected by a dorsal shell, not imbedded; and others, on the other hand, containing a shell more or less hidden in their mantle.

1st Section. Hydrobranchiata.

Branchiata, whatever be their position, elevated either in a net-work, in laminae, in a pectinated form, or in a ribbon-like shape. The animals of this section breathe water only.

(a) Branchiata external, placed above the mantle, either on the back or on the sides, and being in no particular cavity.

Family Tritonidae.


(b) Branchiata placed under the border of the mantle, and disposed in a longitudinal series round the body, or on one side only; not being in any particular cavity.

Family Phyllidae.


Family Semiphylidae.

Branchiata placed under the border of the mantle, and disposed in a longitudinal series on the right side of the body only.

Pleurobranchus. Umbrella.

(c) Branchiata placed in a particular cavity upon the back, situated anteriorly near the neck. Shell always external, and serving the soft parts.

Family Calyptraeidae.


(d) Branchiata placed in a particular cavity towards the posterior part of the back, and covered either by the mantle or by an opercular escutcheon.

(+) No tentacula.


(++) With tentacula.

Family Lapidaeae.

Lapisia. Dolabella.

2nd Section. Pneumobranchiata.

Branchiata creeping, in the form of a vascular net-work, on the wall of a particular cavity, the aperture of which is a hole which the animal contracts or dilates at its pleasure. Animals of this section breathe nothing but air.

Family Limacidae.


Order 3. Tracheipoda.

Body spiral in its posterior part, this part being separated from the foot, and always enveloped in the shell. The foot free, flattened, attached to the lower base of the neck, or to the anterior part of the body, and serving for creeping. Shell spirivalve and sheathing (engainante).

Section 1. (Phytiphagus.)

Tracheipoda without a projecting siphon, and respiring in general by means of a hole. The greater part phytophagus and furnished with jaws. Shell with the aperture entire, having at its base neither dorsal nor subdorsal notch nor canal.

Tracheipoda resiping air only. Shell spirivalve, unarmed (mutique), not distinctly naecrous.

Family Colimacidae (terrestrial).

(a) Four tentacles.


(b) Two tentacles.

Aurica. Cyclostoma.

Family Limaciae.

Amphibuix. Living in the water, but coming to the surface to breathe. Shell with a sharp edge to the lip.

Planorbas. Physa. Lymnaea, or rather Lymnae.

(++) Tracheipoda breathing water only. Branchiata projecting in form of filaments, laminae or tufts in the branchial cavity. Shell often naecrous, and often also having protuberant parts on the surface.

(a) Shell fluvialist, operculated, the left border of which does not resemble a demi-partition.

(+) Shell with disunited borders.

Family Melianidae.

Melania. Melanopsis. Prena. (++) Shell with united borders.

Family Peristomidae.


(b) Shell fluvialis or marine, whose left border or 1 resembles a demi-partition.

Family Neritidae.


(c) Shell marine, whose left lip does not resemble a demi-partition.

(+) Shell floating at the surface of the water.

Family Janthinidae.

Janthina.

(++) Shell not floating, having the aperture very wide, no columella.

Family Macrostomidae.


(++) Aperture without any particular width; plate as the columella.

Family Plicaeidae.

Tornatella. Pyramidella. (+++) No plates on the columella.

(a) Borders of the aperture united circularly.

Family Scalidae.


(b) Borders of the aperture disunited.

Family Turbinidae.


Section 11. (Zoaphagous.)

Tracheipoda with a projecting siphon, and which breathe the water which arrives at the branchus by means of this siphon. These feed on animal substances only; they have no jaws, and are furnished with a retractor proboscis.

Shell spirivalve, sheathing the soft parts, with an aperture which is either canaliculated, or notched, or turned up at its base.

(a) Shell with a canal more or less long at the base of an aperture, and the right border of whose lip does not chance with age.
Family Canisleriidae.

§ 1. No constant bourrelet on the right lip of the species.


§ 2. A constant bourrelet on the right lip in all the species.

(a) No bourrelet on the spire.

Struthiolaria.

(b) Bourrelets on the spire. Ranella. Murex. Triton.

(c) Shell with a canal more or less long at the base of its aperture, and at the right border of whose lip changes its form with age, and has a sinu inferior.

Pteridea (Aillea or Wing-shell).

Rostellaria. Pterocera, or rather Pterocerass. Strombus.

(d) Shell with a short canal, ascending posteriorly, or with an oblique notch at the base of its aperture, this canal being directed towards the back.

Family Purpuridae (Purpuriferes).

§ 1. An ascending canal, or recurved towards the back.

Cassidaria. Cassia.

§ 2. An oblique notch directed backwards.


(d) Shell without a canal, but having the base of its aperture notched or versant, and the whorls of the spire large, compressed, and enrolled in such a manner that the last whorl nearly entirely covers the others.

Family Columelliidae (Columellaires).


(e) Shell without a canal, but having the base of its aperture notched or versant, and the whorls of the spire large, compressed, and enrolled in such a manner that the last whorl nearly entirely covers the others.

Family Conchovolitidae (Conchouvolutes).


Order IV.

Cephalopoda.

Mantle in form of a sac, containing the lower part of the body. Head projecting from the sac, surrounded by arms, which are not articulated, but furnished with suckers (tentacles), and which envelop the mouth. Two sessile eyes; two hornv mandibles to the mouth; three hearts; sexes separate.

1st Division. Polythalamous Cephalopods.

Shell multilocular, enveloped completely or partially, and which is enclosed in the posterior part of the animal, often with adherence.

(a) Shell multilocular, with simple chambers.

1. Shell straight or nearly straight: no spiral.

Family Orthoceratidae.


(2) Shell partially spiral: last whorl continued in a straight line.

2. Family Litoceridae.


(3) Shell semi-discoid: spire eccentric.

Family Cristaceae.


(4) Shell globulose, spheroidal, or oval, with enveloping whorls or partitions united en tautique.

Family Spherothuridae.


(5) Shell disoid, with a central spire, and partitions radiating from the centre to the circumference.

Family Radiiolidae.


(6) Shell disoid, with a central spine, and partitions which do not extend from the centre to the circumference.

Family Nautilidae.


* A cocc.

P. C. No. 891.

** Shell multilocular, with chambers pinked (decupes) at the edges.

Family Ammonitidae.


2nd Division.

Monothalamous Cephalopods.

Shell unilocular, entirely external, and enveloping the animal.

Genus. Argonauta.

3rd Division.

Sesypri Cephalopods.

No shell, either internal or external. A solid free crenaceous or horny body, contained in the interior of the greater part of the animals.


Order V

Heteropoda.

Body free, elongated, swimming horizontally. Head distinct; two eyes. No arms surrounding the head; no feet under the belly or under the throat for creeping. One or more fins, without any regular order, and not disposed by pairs.


Such was Lamarck's arrangement, as he finally left it, after various modifications in the course of his publications, from the commencement of them to the second edition of his 'Animaux sans vertèbres.' During that interval many authors had presented their views to the public, and we proceed to notice some of them.

In 1800, M. d'Audebard de Férussac (the father) produced a system of Conchology based on the consideration of the animal and its shell. He introduced some observations on the complete or incomplete state of what he called the 'spiral cone' of the shell, and the point of attachment of the foot, under the neck or under the belly of the Gastropoda. His views were limited to the terrestrial and fluviatile Mollusks, or 'Muscules,' as he calls them, and subdivides them into orders almost as numerous as his genera, among which he finds Helicolarum, forming the passage between the Limaces and the Helices.

The work of M. Bosc, in the supplements to Buffon (Del., 1802), may be considered as rather of a retrograde character, for it still clung to the system of Linnaeus as amended by Bruguière; and, notwithstanding the progress already made, we find him adhering to the terms Mollusca Worms and Testaceous Worms, as designating the Naked and Testaceous Mollusca. His divisions were nearly those of Bruguière, though he adopted the new subdivisions which Cuvier and Lamarck had established, and appears to have been conscious of the value of those innovations. Bosc was an observer, and had studied many of the Mollusca in a living state. He established many new facts and some new genera.

In 1803 appeared the Prodromus of the work of Draper, which was not published till after his death in 1808, on the Terrestrial and Fluviatile Mollusca of France. This work is conceived and executed in a philosophical spirit, and with rational views of a natural system of classification. He abandoned the arbitrary method of Linnaeus, and returned to the principle proposed by Réaumur (1711) in his 'Memoire on the Progressive Motions of Shells,' making the classification that of Cuvier.

The 'Natural History of Mollusca,' for Sonini's edition of Buffon, was hardly commenced by Denys de Montfort, and almost entirely executed by M. de Roissy. The classification is carried out on the principles of Cuvier, but the author differs from him on some points, as, for instance, in thinking that the section of the Anodons ought not immediately to follow that of the Oysters, and that the aperture which Cuvier regarded as anterior in Biphora was really posterior—an opinion in which he is supported by M.M. Bosc, Péron, De Blainville, Chamizo, and Humboldt. In this work the analogy of the Polythalamous or chambered shells is pointed out. M. de Roissy appears to have perceived the passage from the Univalve to the Bivalve Mollusks by means of the Patella, and he seems to have been the first who placed Aspergillum near to Patella, a position which it still holds.

M. Duméril, in 1806, published in his 'Zoologie Analy.' Vol. XIV—2 T
The second, *Brachiopoda*, contains the three families: Lingulidae, Terebratulidae, and Cerinae.

The third, *Lamellibranchia*, comprises five orders: the Ostracacea, Mytilacea, Berries (Tridacna and H Popup), the Cardiacea, and the Engraves (Myidae, Scoparia, Ptenaria, Thysanidae, and Saccophora), which correspond nearly to the three divisions established on the structure of the shell; and a separation of the *Brachiopoda* as a distinct order.

In 1806 Denys de Montfort published his *Univalves Classées*, and in 1810 the second volume of his *Conchyliological Systematic*, containing the *Univalves non Classées*. His genera are very numerous, and not many of them are retained at present by zoologists, though they are for the most part well defined. The method is only carried out with regard to the Univalves; but his primary division rests upon the number of valves, and is separated into *Univalves*, *Multivalves*, and *Bivalves*, as in the systems of the older conchologists. He differs however in restricting the term *Disculae* to shells made up of several united pieces, without any solution of continuity; while he applies the term *Disculae* to shells made up of many pieces, but not coherent nor adherent to each other, as *Terebra*, *Pinnidae*, *Palaeonias*.

Oken, in 1810, read to the society of Gottingen a paper upon the knowledge of Mollusca apart from their shells and upon a natural classification established upon this basis; and published this principle in his *Manual of Nat. Hist.*, published at Jaen in 1816. Oken's terms will not allow us to do more than call the reader's attention to this work, which he will find well worthy of perusal, though it does not contain any new principle of arrangement, and there is somewhat too much of change of name about his genera, of which there are but few really new; nor can we do more than hint at the work of M. Rafinesque (Palermo, 1814). About the year 1816 much light was thrown on the *Aggregates Mollusca* by Leewards, Desmarest, and at last by the great Sayvig (1817). In 1817 M. de Blainville first made use of two other principles of his own, which he afterwards carried out to its completion, and to which we shall call attention in the proper place. The systems of Goldfuss and Ranzani, presented in the same year, 1829, the first at Nuremberg and the second at Bologna; the second may be regarded as a compilation of the labors of those malacologists who had embraced the natural system; and the basis of the second, as far as the Cephalopoda are concerned, rests upon the structure of the shell and its operculum without regard to the animal, and, as far as relates to the cephalopod mollusks, on little more than the teeth can give new denominations to the four sections of that division.

M. de Férussac (the son) divided (1819) the Mollusca into two grand sections, the *Cephalas* and the *Acephalas*.

Cephalas Mollusca.

These are divided into three classes—Cephalopoda, Pteropoda, and Gastropoda.

The first class, *Cephalopoda*, contained the two orders, Decapods and Octopods, as in the arrangement of Dr. Leach. This class in the system of De Férussac embraces all the naked cephalopods and all the animals with multilocular shells; but was subsequently considerably modified in a joint work with M. d'Orbigny.

The second class, *Pteropoda*, which originally consisted of the orders Liriope, Clor, the Pneumoderma, and the Phyllolethoptera, also underwent considerable changes in a subsequent joint work with M. Rang.


Acephalas Mollusca.

These are divided into four classes—Cirripedes, Brachio- pods, Lamellibranchs, and Tunicers.

The first, *Cirripedes*, is divided into the orders—Scallop Cirripedes and Pendunculated Cirripedes.
Order 3.

**Polythalamaceae.**

**Family 1. Orthocerata. Genera** *(with simple chambers or partitions)*. Belemnitidae, including Cellirrhoe, Hibolitites, Perdratites, Cecilia, Acamas, and Faciales of De Montf.; Coniulitae; Comites, including Acheulus, Ammonites, and Thalamus of the same; and Orthocerata, including Nodosaritae (Lam.).

**Family 2. Lituacea. Genera** *(with simple chambers)*. Lithosphaera, Spirula, including Hortosul and Lituitae of De Montf., and Spirulina of Lam. **(with simple chambers)*. Hamites and Ammonocerata.

**Family 3. Cristacea. Genera**. Crepidulina, including Acastus, Cenceria, and Peripels of De Montf.; Orsea; and Lenthalia.

**Family 4. Ammonacea. Genera**. Discoceratina, Scaphites; Ammonites; and Simplexes, including Ammonites, Planalites, and Amatholem of De Montf.

**Family 5. Nautiaceae. Genera**. Orbites, including Aganeides and Pelagus of De Montf.; Nautilus, including Angulites, Oceanus, and Bisphytilia of the same; Polystomella, including Geophyllites, Perolites, Euphusia, and Thome-

**Family 6. Turbiniae. Genera**. Cichicid; Rotalides; including Storilius, Cidarolus, and Cortulus of De Montf.

**Family 7. Turriculacea. Genera**. Turritilis. Class II.

**Paracephalophora.**

Subclass I.

**Paracephalophora Dioica** (Aquatic, but capable of living for some time out of water).

**§ 1.**

Organs of respiration, and shell, where it exists, non-symmetrical.

Order 1.

**Siphothalamia.**

**Family 1. Siphonostoma** (Murex, Linn.). Genera *(or persistent burrelet on the right lip)*. Pleurotena, including Clavata, Lam.; Rosellina, including Hippocnemis of De Montf.; Fusus, including Latirus of De Montf.; Pyula, including Fulgur of De Montf., and Melogena and Rapsana of Schum.; Fasciolaria; Turbinilla, including Polypectyle of Schum; Aciplina; and Perlia of De Montf., and Struturelia of Lam.; Ranellla, including Buffo and Apollon of De Montf.; Murex, including Bronte, Chicores, Typhis, and Phos of the same.

**Family 2. Entomotoma** (Buccinum, Linn.). Genera *(Turchelated Entomotome)*. Cerithium, including Vertus of Schum.; Triphora or Tristoma of Deshayes; Nerita of Defrance, Potamides of Brongrai, Pyraus of De Montf., and Pirenna of Lam.; Melaspis; Planaxis; Subula. **(Turcephalophora. Entomotomata)*. For those whose shell is general globulose, Harpa; Didium, including Perix of De Montf.; Cissaria, including Oniscus of Sowerby; Cassis; Ricinula, including Ciastrum of De Montf.; Cancellaria; Purpur, including Monoceros of De Montf. **(Ptiloteum Entomotome)*. For those whose shell is a convex flat, with a spire but little marked, and no colenula, Conchelepas.

**Family 3. Angyostoma**. Genera *(an operculum)*. Strobombus, including Pietrocoar of Lam.; Comus, including Rhombus, Cylinder, Rutilus, and Harmes of De Montf.; **(no perioecium)*. Teredinomorpha, including Seralis of De Montf.; Oliva; Ansellaria; Mitra, **including Turris of De Montf.** Imbricaria of Schum., and Conicoli of Swain.

† Mr. Gray as sure; M. de Blainville that there was a small horse opercu- lum in this genus.

†† Probably only the young of Cypris, notwithstanding Adanson's observation, that he had seen both young and old ones. He, no doubt, saw them in various stages of growth, in which the young of Cypris put on very different aspects. His figures represent the young of a Cypris. 2. M. de Blainville thinks that true Tornaria should be separated from Pedipes, because the type of the latter genus is opercu- lum, according to Mr. Gray.

††† Should be united, the opercular species at least, with Cryptostoma, Quoy and Gaimard, de Blainville.
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Subfamily of Oken; Dolabella; Bursatella; Notarchus; and Elysia.

Family 2. Patellidae. *Genus* Umbrella (Acardo of Megerie); Siphonaria; and Tydolida.

Family 4. Akera. *Genus* Bulula, including Apilustro of Schum; and Atys and Scahepanther of De Montf.; Bellerophus; Bullea; Lobaria; Sormotus; Gasteropiera; and Atlas.

Order 2. Aporobranchiata.

Family 1. Thecosomata. *Genus* Hyalina; Cleodora, including Vaginella of Daudin and Styloila of Lesueur; Cymbula, including Artigora of Lesueur; and Pyrgo.

Family 2. Gymmosomata. *Genus* Magus, including Clido-dites, Quoy; and Gaim; and Pneumodermata.


Order 2. Polybranchiata.

Family 1. Tetracerata. *Genus* Glauce; Laniogena; Tergipes; Cavolina; Solida; Dermatombranchus; and Placobranchus.

Family 2. Dicerrata. *Genus* Scylla; Tritonia; and Tethya.

Order 3. Cyclobranchiata.

*Genus* Doria, including Polyca of Cuv.; Onchidoria; and Peronia.

Order 4. Inferobranchiata.

*Genus* Phyllidia and Lingueilla.

Order 5. Nucleobranchiata.

Family 1. Nectopoda. *Genus* Pterotriches, including Fiolia; Pyrotiloides and Sagitella of Lesueur; and Carinaria.


Subclass III. Paracephalophor Hermsphrorida (Patella, Linn.).

Order 1. Organs of respiration and shell symmetrical.

Order 2. Cirrhopatella.

*Genus* Dentalium, including Entale of Defr.

Order 3. Cervicothoracica.

Family 1. Retifera. *Genus* Patella, including Helcion of De Montf.

Family 2. Branchifera. *Genus* Fissurella; Emarginalia, including Rinula of Defrance; and Parmophorus.


Family 1. Oidea. *Genus* Haliotis, including Padollus of De Montf; and Stomatia of Lam.; and Aneyls.

Family 2. Calyptraeidae. *Genus* Cepedulidae; Calyptraea; Capsula; Hipponyx; and Notreuma.

Class III. Acephalophor.

Order 1. Pulicothoracica.

§ 1. Shell symmetrical.

*Genus* Lingula, Terebratula, including Pentameria; Spirifer; and Productus, Sow.; Striggoocephaeus; Defr.; and Magna; Thecidea; Stromphomena; Facbytes; Dianeha; and Podopsis.

§ 2. Shell non-symmetrical, irregular, constantly adherent. *Genus* Orbicula, including Ducina; Lam.; and Crania.

Order 2. Rudita.

*Genus* Spherulites; Hippurites; Radiolites; Boreitiae, including Iodamia of Defr.; and Calcoila.

Order 3. Lamelibranchiata.

Family 1. Ostracea. *Genus* Anomia; Placema; Harpa; Ostrea; and Gryphaea.

Family 2. Subostracea (Ostrea, Linn.). *Genus* Ostrea; Spondylus; Plicatula; Hinnites; Peten, including Ama- nium and Pandora of Megerie, and Neithia of Drouet; Pedi; and Lima.

Family 3. Margaritacea. *Genus* Valves; Malteus; Perna; Crenatula; Innoceramus; Calitus; Pulvinites; Ger- tillia; and Avicula, including Margaritipora of Megerie Margarits; Leach, Molasgra; and Lam.

Family 4. Mytilacea. *Genus* Mytilis, including Modio- da and Lithobius (Lithobius, alters of Regius); Flama.

Family 5. Polyodonts, or Arcas (Arcas, Linn.). *Genus* Arca, including Trias of Oken; and Cuculse of Lam.: Punctunculus; and Nucula.

Family 6. Submytilacea. * (species with an epidermis and nacreous; freshwaters). *Genus* Anodonta, including Berpolis; Leach; Inidria; Lam. Dipus of Leach; Alama- donta; Say; and Cristaria of Schum.; Unio, including Hyria and Castalia; Lam. * (species without an evident epidermis, not nacreous, and more or less pneu- mated; marine). Cardita, including Venerocardia and Cypriaecardia of Lam.

Family 7. Chamacea. * (shell irregular). *Genus* Chamia, including Caramostia of De Rosey; Decera, Etheria; * (shell regular). *Genus* Trepida, including Hippopomus; Trilocaria; and Trigonia, including Opus of Defr.

Family 8. Conchacea. § 1. Regular Conchacea with lateral distinct teeth. *Genus* Cardium, including Hem- cardium; Donax; including Capas; Lam.; Tellina; including Tellinidies; Lam.; Locina, including Lories of Ped. Amphidemia of Lam.; Fimbria of Megeria, Corba of Cerv. Cyclas, including Cornes, Corbicula, and Pias of Mei- geria; Cyrons; and Galathea of Lam.; Cyprinus; Mastra; and Erycia. § 2. Regular Conchacea without lateral distinct teeth. Crassatella; Venus, including Arthemia of Ped. Venus; Cytherae; and Cassin of Lam. (Anisus; Scy- hery; Nicana; Leach); Triqueta of De Blainv.; and Ma- coma of Leach. § 3. Irregular Conchacea; Veneres; including Rupellaria of Fl. de Bell. and Petricola of Lam.; Coralliophages; Citho; and Ungulina.

Family 9. Phylloidea. § 1. Ligament internal. *Genus* Corbula; Sphagna; Osteodessa, including Rupella of Fl. de bell; Thracia; Homecydostoma; and atanes. * Mya, including Erodona of Daudin; Lutreolax; in- cluding Ligula of Leach, and Lutaria of Lam. § 2. Laga- phides extern and convex. *Genus* Nuculacea, including Pass- mobilia and Pammotes of Lam.; Solettini; Sanguinulae; Solecurtus; Solea; Solemya; Glycimia, including Muc- concha; Panopoma; Saxicava; Byssomaya; Rbombedes; Hiatella; including Bivalves of Leach; Gastrochernes; Claeginae; and Aspergilum.

Family 10. Adesmacea. *Genus* Pholas, including Mar- titus of Leach; Teredina; Tered; Fistulana; and Septar. Order 4. Heterobranchiata.


Sub-type. MALENTOCRANIA.

Class I. Nematopoda.

Family 1. Leperidea. *Genus* Lepas; Gymnoceph.
including Otion and Cineras of Leach; Pentalepas, including Pentalaimis and Policilles of Leach; Polyplepas, including Scalpellum of Leach; and Lithopela.

Family 2. Balamides. (Balanus, Brug.) * (operculum articulated, and more or less vertical). Genera: Balanus, including Anasata of Leach; Othocardium; Ota, including Anasemus of Ranazzi; Creusia, including Pyrgoma of Savigny; and Chthalamus. ** (operculum not articulated, and more or less horizontal). Coronula, including Chelonobia of Leach, Ostropia and Diadema of Ranazzi, and Tubiconella of Lam.

Class II. POLYPLAXISPHORA. (Chiton, Linn.)

Genera, Chiton, including Chitonellus of Lam., and Chitonellus of De Blainville.

Our limits will not allow us to do more than refer to the systems of Schumacher, Latreille, and Rang, though they will, the latter especially, which is in many respects a happy combination of the systems of Cuvier, Lamarck, and De Blainville, with some alterations, well repay the reader for their perusal.

The organization of the animals above treated of will be found under the titles CEPHALOPODA, CONCHIFERA, GASTROPODA, and other articles relating to them in this work.

MALACONOTUS. [SHIRKES.]

MALACOPTERYGYL, according to Cuvier, the second great division, or order, of osseous Fishes, the species of which are distinguished from those of the Agnatha by the soft and carinulagious; exhibiting minute articulations and often divided into small fibres at their extremities. It habitually happens however that the anterior ray of the dorsal or of the pectoral fins is hard and bony, a character observed nearly in all the species of the Siluridae and in many belonging to other families.

The greater portion of the fishes of this order have the scales formed of simple laminae and with smooth margins; in this respect the well known species of the Percomorphi, Scaridae, &c., in which the edges of the scales are pectinated or serrated. The Pleuronectidae, or flat-fishes, however, present the latter structure of scale; and yet, according to Cuvier, are placed in the Malacopterygii. M. Agassiz, on this account, separates this group to another section, and he also arranges the Siluridae in another group, owing to the structure of their scales. [SILURIDE.]

The Malacopterygii are divided into three sections. First, the Abdominates, in which the ventral fins are situated; and not very common, though they have been observed in the second section (Subbrachiales) the ventral fins are situated immediately beneath the pectorals, and the pelvis is suspended to the bones of the shoulder. In the third section, the Brachiopterygii, the ventral fins are wanting.

The section Abdominates contains the following families. 1. Cyprinidae, or fishes allied to the Carp; such as Barbel, Gudgeon, Tench, Bream, Roach, &c. 2. Exocididae, of which the common Pike may be regarded as the type. 3. Siluridae, or fish of the Siluridae, containing a number of representative species in this country, at least not well authenticated. 4. Salmonidae, or fishes of the Salmon tribe. 5. Clupeidae, of which we have familiar examples in the Herring, Sprat, White-bait, Anchovy, Shad, &c.

The section Subbrachiales contains the families Gadidae (Cod-fish, Haddock, Whiting, Ling, &c.); the Pleuronectidae, or Flat-fishes, such as the Plounder, Halibut, Sole, &c.; the Discoboltidae, of which family the common Lamp-fish will furnish an example; and finally the Echeneidae, containing a group of numerous, yet not very well known species.

The third section, Apodes, contains the Eels, Lance-fishes, &c.

MALACORHYNCHITUS. [Ducks, Vol. ix. p. 179.]

MALACOSTRACA (Malaca). The Malacostraca are a large group of crustaceans named by Aristotle to designate the crustacea generally, but confined by Dr. Leach in his arrangement to the second order of the class. The Malacostraca of Leach are divided into three tribes. 1. Branchiura, including the families Cancrinidae and Oxyrhynchidae. 2. Macroura, including the families Paguridae, Palinuridae, Astaciidae, and Squillidae. 3. Gasterura, including the families Grantiidae, Gammidae, and Anaspididae.

MALACOTA, Schumacher's name for a genus of Cirripedia, Otion of Leach.

MALACOZOARIA. [MALACOLOGY, p. 328.] MALAGA (the Malaca of Strabo, 156, Casarub.,) the principal seaport of the province of Granada in Spain, is situated in 36° 45' N. lat. and 4° 30' W. long., in the sight of a bay on the coast of the Mediterranean; in the city extends a spacious and fertile plain, called La Hoya, bounded by ranges of lofty mountains. The Guadalmedina, a mere brook in summer, but in winter a stream of considerable volume, enters the sea immediately to the west of the city.

Malaga is of great antiquity, and claims to have been founded eight or nine centuries B.C. by the Phoenicians, who gave it the name of 'Malcha,' or 'oyal,' to intimate the formation in which it was held. Though high antiquity there is no evidence. W. Humboldt (Prüfung der Untersuchungen über die Urbewohner Hispaniens, &c.) says that Malaca was a pure Basque word, and signifies the 'side of a mountain.' It was possessed successively by the Carthaginians; by the Romans, who called it 'Malaca,' and made it a municipio and confederate city; by the Goths, and by the Arabs. For the first three centuries of the Moslem domination in Spain, Malaga was subject to the caliphs of Cordoba; but on the disruption of that caliphate, it fell into the hands of the Moors. In 1246 it was annexed, early in the thirteenth century, to the kingdom of Granada. In 1487 Ferdinand and Isabella wrested it from the Moors, after an obstinate siege of three months, during which the citizens endured the severest privations.

From the earliest ages, until all the nations who have possessed it, Malaga has been renowned for its commerce. At the present day it is the only flourishing city in the province of Andalusia. Its imports are broad-cloths, cottons, fustians, muslins, spices, hemp, and a large quantity of tobacco, more considerable, and amount on the yearly average to more than 4,000,000 dols, or about 1,000,000 sterling. They consist principally of wine and fruits; the former, which was found to be of the best, as well as 'starries,' was wholly consumed by the United States and Spanish America; the latter are chiefly fresh grapes and raisins, vast quantities of which reach the English market, together with some figs, almonds, oranges, and lemons. The other exports of Malaga are tobacco, brandy, oil, wine, and a kind of leather which is the only manufacture of Malaga worthy of mention.

Malaga at present contains about 62,000 inhabitants, but it was much more populous in the time of the Moors. Though the streets are narrow, tortuous, wretchedly paved, and not very commodious, they have some small advantages, as the exteriors of the houses are whitewashed or stained a yellow-ochre colour. Many of the roofs are flat, as in the East, and are surmounted by minarets, or square towers, where the Moors are wont to build their mosques. The cool sea-breezes. The city is divided into six parishes, and has several colleges and public hospitals, an iron foundry of very recent erection, and a tobacco-factory where 700 persons are daily employed in making cigars. There were also twenty-four convents, but these were suppressed, in 1835. Malaga is an episcopal see, and possesses a cathedral, a light and handsome building in the Greco-Gothic style; it is nearly 400 feet long, 150 broad, 125 in height from the pavement to the roof, and is surmounted by a simple 270 feet high. It contains few pictures of merit, but has some good specimens of the coloured wooden statuary in which the Spaniards excel. The alameda, or public promenade, is adorned with fountains and flowering shrubs, and banked by private mansions of great splendour. The harbour of Malaga is spacious, but is separated from a large fleet; it is protected on the east by a massey stone mole, five furlongs in length, terminated by a handsome lighthouse. Few remains of Roman architecture now exist in this city, though it has been inhabited from the remotest antiquity, and are interspersed through the city in gateways, towers, walls, houses, and fragments of mosques. But the grand boast of Malaga is the Moorish castle, built in 1279, and covering the slope of a hill immediately to the east of the city. It is 247 feet in height, and is crowned by a tower castle, or alcazaba, and the upper, or gibralfaro, so called by the Moors from a Roman pharos which is said to have stood on the crest of the hill. The whole displays in its ruinous condition the effects of the Christian artillery in the siege of 1487.

Malaga enjoys a serene and delightful climate, with a peculiarly dry and unclouded atmosphere. Proteus are
abundant and cheap. The citizens are gay, courteous, and hospitable; and the females are renowned throughout Spain for their grace and beauty, sprightliness and humour. The lower orders of Malaguscus tend to indulgence, thriftlessness, revengefulness, and prone to commit assassination. Malaga gave birth in the twelfth century to Ibn Befair, the naturalist, the Pliny of the Arabians.

MALAGRIDA. [Jascura.] Malaca (called also Malela, or Malalas, or Malelas), was the author of a chronicle in the Greek language, in 18 books, which extends from the creation of the world to the reign of Justinian. The time in which he lived is uncertain. He must have been alive after the reign of Justinian, which the chronicles of that period, in which emperor reigned. Hody, in his Prolegomena to the Oxford edition of this writer, endeavours to show that he lived in the ninth century; but this opinion has been controverted by Martin, Gibbon, Reiske, and L. Dindorf, who maintain that he lived shortly after the reign of Justinian.

Malaca is a Syracse word, signifying 'orator,' or 'rhetorician.' He is also called John of Antioch; but he must not be confounded with the John of Antioch who wrote a medical chronicle, extracts from which have been preserved in a work of Constantine Porphyrogennetus, "On Virtues and Vices."

The chronicle of Malaca was printed for the first time at Oxford, 1691, under the superintendence of Chilmead, who does not seem to have properly published it. Hody prefixed a dissertation to that edition of the life and writings of Malaca; and Bentley an appendix, in the form of a letter to Mill, in which he corrected numerous passages. Bentley's letter to Mill was reprinted at the end of Bentley's "Emendatio- biter, or Philomenis Religionis," Camb., 1713. The chronicle was also published at Venice in 1733; but the best edition is by L. Dindorf (Bonn, 1831), which contains the notes of Chilmead and Hody, as well as Bentley's letter to Mill.

MALARN, LAKE OF. [Sweden.] MALATIA (or more correctly Malatiah), a town of Asia Minor, about 38° 25' N. lat. and 38° 20' E. long., is built in a fine plain, about 15 miles from the banks of the Euphrates. About six miles south-west of it is the town of Aspdi, which was the seat of Malatiah during the summer months, returning for the five winter months to Malatiah. These towns, which may be considered as one, contained in 1836, 3923 families, 2600 of which were Turks and 1323 Mohammedans. The town was formerly more populous, but plague, cholera, and the depredations of the Kurds have greatly reduced it. Aspdi is situated on the side of a mountain in a forest of fruit-trees. Malatiah is in a plain, which at present is nearly reduced to an uncultivated state. The town has 61 and 186 houses. It has a mill, a hospital, and a bazaar. The houses have a mean appearance, and the shops in the bazaar are mere mud-stalls. There are two well built mosques and two caravanserais, all in the Persian style of architecture. Malatiah derives its present importance from being the final depot of the commerce of the four provinces of the Euphrates valley, which leads from Siyas to Deyr-bekr and Mosul, and from being one of the places to which the Kuras resort for the purpose of trade. (Brant, in the London Geographical Journal, vol. iv.)

MALAY PENINSULA constitutes the most southern extremity of the continent of Asia, extending between the Gulf of Bengal and the Straits of Malacca on the west, and the Gulf of Siam and the Chinese Sea on the east. It is nearly 12° in latitude; its northern extremity, the southern points form the northern extremity of the Straits of Singapore. Kio Point, in the Gulf of Siam, and the mouth of the Tanasserim river, which enters the Gulf of Bengal, may be considered as constituting its northern boundary; they are situated near 13° 15' N. lat. Cape Burus, the most southern promontory of Asia, in 1° 10' N. lat. and Cape Romania, in 1° 17', constitute the two extremities of the Straits of Singapore. The peninsula lies between 98° and 104° E. long. It is 750 miles long, with a width varying between 60 and 186 miles. Its surface may cover an area of about 80,000 square miles, or about 4000 square miles less than that of Great Britain.

The peninsula is traversed by a mountain-range, which is a continuation of the Samroyet (i.e. three hundred peaks) mountains, which between 12° and 14° N. lat. separate the coast of the Malay peninsula from the islands of Java and the Moluccas into the Gulf of Siam. This chain, which in this part rises in numerous peaks to the elevation of 3000 feet, ends lower south of Kio Point, where it traverses the isthmus of Krah, the narrowest part of the peninsula, between 9° and 10° N. lat. This isthmus, though of moderate elevation, occurs together with its offsets the whole country from one sea to the other, except at its southern extremity, where an external tract of alluvial land, enclosing the bay of Ch'yan, occurs in the island of the Gulf of Siam.

The isthmus of Krah lies due north and south. At its southern extremity, between 8° and 9° N. lat., the Malay Peninsula turns to the south-east, and preserves the direction to its most southern point. Between 6° 39' and 8°, the valley of the Tanasserim river from the mountain-range to the southern extreme, but this fact is not established, as no European has ever traversed this country. The tract between 5° and 6° 30' N. lat. appears to be the highest part of the mountain-range, the peak of Titch Banga, opposite the town of Queens, of about 1500 feet. It consists throughout a series of two moderate ranges, the upper more extensive, but the offsets of the mountains in some parts approach near the sea-shore, as Cape Pains and Rocky Point.

South of 6° N. lat. is the widest part of the peninsula, which is about 180 miles in breadth. The interior or moun- region of this part is little known, but it is certain that it is less elevated than the country farther north, and the summits of the hills are more rounded. The level tract between the Straits and the mountains, which is known, is about 18 miles in breadth north of 4° lat., and more than 20 miles in breadth south of that parallel; but along the sea-shore a few isolated hills rise to a moderate height, as Rachado Point and others. The range forming the water-shed between the rivers which rise in the eastern portion of Malacca and the Chinese Sea does not occupy the centre of the peninsula, but is nearer the western than the eastern shores. The level country along the Chinese Sea is also, so far as is known, much more extensive south of the town of Johore, as contains about 160,000 square miles in circumference. On the eastern boundary of the district of Malacca is an elevated summit, the Gomag-Leading of the natives, and Mount Ophir of the Portuguese, whose summit is estimated to be 4090 feet high. On the eastern side of the Straits, the mountains subside into hills; but even along the Old Straits, which divide the island of Singapore from the continent, the country presents a rocky and elevated shore, and its surface is strongly undulating, though it can hardly be called hilly. On the western side the level country along the Straits of Malacca and the Chinese Sea is of inconsiderable width.

The comparatively small width of this peninsula and the disposition of the mountain-range prevent the formation of considerable rivers. The largest, the Kio, or Musur river, which forms the southern boundary of the district of Malacca and falls into the strait of that name, and the Pahang river, which runs nearly north on the eastern side of the peninsula. Both rivers are navigable, but they issue from the mountains, and the Pahang is in a large partage of not more than 300 yards. The Pahang river flows 200 miles under the name of Suruting, and falls into the lake of Braugh, from which it issues under the name of the Strat, which joins the Musur, and soon after it rounds the mouth of the Strait, near Pahang, are four large islands, planted with cocoa-nut and palm trees. It is probable that there are other rivers, navigable at least for a considerable extent, but they are not known. The number of small rivers is very great, and there probably is no country better watered than this peninsula.

The climate differs on the eastern and western sides of the peninsula. The eastern resembles the coast of Core- mandel and of Cochin China Proper, as the mountain-range is elevated, and the country watered by the eastern monsoon, which prevails during which period the dry season prevails. But the western is exposed to the full effects of the north-west monsoon.
and the wet season commences in the beginning of November and continues till March. The northern part of the peninsula, especially in Malacca, has a rainy season in our summer, and its dry season in our winter. The southern portion of the western coast differs in climate from all other coasts. The cultivated fruits are the jack-fruit, durian, sapan-wood, mangosteens, durian, shaddock, and oranges. As articles of commerce, pepper, cotton, and a little coffee are cultivated. The country is generally covered with high trees, even on part of the mountains, but the teak-tree does not occur in the peninsula. There are no elephants. The fruits of the peninsular are not inferior to those of other countries near the equator; and though during the day the sandy shores are heated to a great degree, the air is cooled sufficiently during the night. Though no meteorological observations on this country have been published, it is supposed that it is much more frequented by the thermometer in summer than in winter, for it is much more small; it seems to amount hardly to 10 or 12 degrees in the whole year.

The soil seems not to be distinguished by fertility, being in the northern part of the peninsula tough and clayey, or a black earth similar to peat; but in many places yields a crop of rice. Besides rice the inhabitants live on plantains and some other vegetables; also on fruits, in which this country, especially towards the south, surpasses all other countries. The vegetation is composed of immense forests and jungles. The inhabitants have not been examined by botanists, except in a few places. Rattans are exported in great numbers.

Cattle are very few in number, but buffaloes abound. No sheep are kept; hogs and fowls are plentiful. In the cultivated tracts and wheat, tigers, leopards, and rhinoceroses are frequently met with, and sometimes elephants. Among the birds, that kind of swallow which makes the edible nest is the most remarkable. It occurs however chiefly on the islands which skirt the peninsula on the east and west, and perhaps also on the islands situated on the coast where the rocks approach the sea-shore. Fish is extremely plentiful, and constitutes one of the most common articles of food.

The most important articles of commerce are from the mineral kingdom. Gold is found in all the rivers, and also got from mines. A sufficient quantity of this metal is collected to justify the name of Chersonesus Aurea, or the Golden Chersonese, which the ancients gave to this country. Tin is still more abundant, and seems to occur in the whole range from the isthmus of Kra to the southern extremity, but not in the Samroiyet range, north of the isthmus. The quantity annually collected probably exceeds 40,000 peculs (1 pecul = 133 pounds), and the greatest part goes to the kingdom of Siam. It is exported from the harbours on the Gulf of Siam to China. Other metals are not noticed.

The bulk of the population consists of Siamese and of Malays. The former occupy the isthmus of Kra and the districts north and west of the peninsula; they form the latter the interior of the peninsula. The Malays of this country have not attained that degree of civilisation which is found among the inhabitants of Sumatra and Java. They show little industry in cultivating the ground, and still less in the manufacture of clothes and other necessaries. [MALAYS.] The language of these nations is different. In the interior there are two other nations: the Jakong, or Benau, inhabit some wooded plains towards the southern extremity of the peninsula; they are divided into two classes, the copper-colour, their hair is straight, and their features resemble those of the Malays. They have no fixed habitations, and live by the produce of the chase. Crawford thinks that they are Malays in the lowest state of civilisation, an opinion which is supported by their language, which contains but few words that cannot be traced in the Malay language. In the interior, beyond the 9°, lie the Samo-lang, who claim to belong to the races continuous to that of the negroes, which is found from the Adaman Islands on the west, to Papua, or New Guinea, on the east, and as far as the continent of Australia. They resemble the African negroes in type and have black hair. In situation however they are much shorter, their average height, according to Light, in Maraden's 'History of Sumatra,' not exceeding 4 feet 8 inches. They have no fixed habitations, they live in the forests and mountains on the produce of the chase, and eat roots. They are a kind of cave-dweller, and in addition to their food, they are extremely timid, and have little intercourse with their neighbours. The whole of the Malay peninsula is thinly inhabited, and many extensive districts in the interior are unpeopled. The whole population perhaps does not exceed 1 million.

The northern part of the peninsula, as far south as the bay of Chai-ya, is immediately subject to the king of Siam. On that bay are two harbours, called Chai-ya and Bandon, and on the opposite western coast the harbour of Phungo, or Puno, from which a commercial road traverses the peninsula to Chai-ya and Bandon. The produce of the island of Junk Seylon, or Salanga, and also European goods, are transported from Phungo across the isthmus to Bandon and Chai-ya, and thence to English ports. Furniture, manufactures, articles of dress, and other commodities from the islands of Kos Samo or Pullo Carnam, the Chinese fetch cotton and edible nuts; ten or fifteen junks arrive annually for that purpose.

That portion of the peninsula which lies between the bay of Chai-ya and the kingdom of Bandon is the kingdom of Cochin, inhabited by negroes, dependent on the king of Siam, and partly belongs immediately to Siam. The town of Ligar is said to have 5,000 inhabitants, Malays, Chinese, and Siamese. A few Chinese junks arrive annually here for cotton, tin, pepper, and rattan, to which articles of dress, and to which they have not been examined by botanists, except in a few places. Rattans are exported in great numbers.

The kingdoms of Calantau and Trinago on the eastern, and that of Queoda on the western side of the peninsula are only nominally dependent on Siam, and their commercial intercourse is not frequented. These kingdoms have a commercial intercourse with Cochin. They are connected with the kingdom of Siam by the isthmus of Bandon and the river Trinago, and have some commercial intercourse with the kingdom of Siam, which is governed by the king of the kingdom of Siam, and partly belongs immediately to Siam. The town of Queoda is a small place. Its commerce was formerly considerable, but has been nearly destroyed by the establishment of Prince of Wales Island. A few miles behind the town is a considerable place, which is the residence of the princes.
to Siam and Haid; and Notices of the Indian Archi-
pelego, &c., collected by J. H. Moor, Singapore, 1837.)
MALAYS, THE, are a nation of Southern Asia, who
occupy the shores of the Malay Peninsula, and, if language
may be taken as a proof of the fact, seem to have spread
over all the islands from Madagascar on the west to Eas-
ter Island on the east. Almost all the languages spoken
in the islands of the Indian Archipelago and in the Pacific
contain a great number of words and expressions which
embody and express the peculiar ideas of the people, and
physical character of the people confirms the inference
drawn from this circumstance. The great body of this
nation however inhabit the larger islands of the Indian
Archipelago.
In the history of the Malaya short, squat, and robust.
The medium height of the men may be five feet two inches, and
that of the women four feet eleven inches, or about four
inches less than the average stature of Europeans. Their
lower limbs are rather large and heavy, but not ill-formed.
Their noses are large and rather flat. The eyes are small, and always black. The com-
plexion is generally brown, but varies a little in the different
tribes: climate seems to have nothing to do with the colour.
The nose is very flat, only a few of them being a little more
than the others, which are on the equator. The hair is long, lank, harsh, and always
black. Compared with Europeans and the nations of
western Asia, the Malaya must be considered an ill-looking
people. In person and complexion they most resemble the
inhabitants of Java, but much less so than they resemble
even from them, and are a very distinct people, with a
striking likeness among themselves, and a marked disami-
licity from all other people.
Crawford, who has carefully examined the different lan-
guages of the Indian Archipelago, finds in them a great
similarity in respect of pronunciation, grammatical struc-
ture, and idiom. Twenty consonants and five vowels are the
number which these languages generally admit, and only two diphthongs sounds occur. The struc-
ture of the word is very simple. Among the related
languages are marked by prepositions, the tenses of verbs by aux-
iliaries, the passive forms by the prefixing of particles, and
the transitive forms by affixing particles. Many idiomatic
phrases, though expressed by words differing in sound among
different languages, have the same meaning, and is the same
as the signification of the Spanish.
These languages are rich in expressions for familiar objects,
but poor in the expression of abstract ideas, particularly
such as relate to the operations of the mind. For many moral
ideas they have no expressions at all. Not less than five
kinds of languages are used by them. They have the nation,
who inhabit the Indian Archipelago, the Arabic characters
not included, which are in general use among the nations
that speak the Malay language.
There is considerable progress in civilization;
but more in the island of Java than on the other
islands of the Indian Archipelago. They are well acquainted
with agriculture and some of the mechanical
arts. They have also some degree of progress in medicine and music.
They are undoubtedly more civilized than any of the nations
of southern Asia which inhabit the countries between China
and Hindustan. The Malaya have great mental activity,
and eagerly apply themselves to commerce and navigation,
but their navigation does not extend beyond the seas sur-
rrounding the Archipelago. By traversing these in their
islands, and being favoured by the great number of
small inhabited islands, their daring spirit urges them to
piracy. Various parts of the Indian Seas are thus made
vicious to commerce or small vessels, but the Malaya pirates
rarely attack Europeans. Most nations of the islands
that inhabit the Indian Archipelago are Mohammedans,
but they differ considerably from the Arabs in manners;
their wives, for instance, are not secluded from society.
They are very useful, and among the different ways
of taking revenge is the extraordinary one of 'running
a muck,' as it is called.
According to the traditional history of many of the Malay
tribes, the country of Menangkabo, in the interior of Su-
ma, is their original seat, and it is asserted that they first
issued from it so late as 1160, and passed over the
Peninsula, where they built a town, called Singapura,
Hence they are said to have spread over the lower parts
of all the islands of the Archipelago. But when we
consider how far the Malay tribes are scattered towards
the east in the islands of the Pacific, this tradition seems very
improbable. It may be proper to refer to the foundation
of the Mohammedan creed, as, according to Marden, a Mo-
hammedan is called in Sumatra a Malay, even when he
belongs to one of the tribes which are not of Malay origin.
In the larger islands the Malay population generally succeed
the aborigines, and the latter have confined themselves to
islands in the interior. On the smaller islands the original inhabitants have been
extirpated.
(Marden's History of Sumatra; and Crawford's History of
the Indian Archipelago.)
MALCOLM I., king of Scots, was the son of King Do-
naid IV., who died in the year 904. He succeeded to the
throne when King Constantine III. abdicated, for the reti-
ement of a monastery, in the year 944, and he appears
to have been a very ill-regulated king. The longest
period of his reign was the cession of Cumbria by the English king
to the king of Scots. In this it is said the English king resigned
to Scotland what he found he could not easily retain, the border districts being, from the mixed character of the peo-
ple, subject to frequent disturbance: and by the cession of these districts the English king hoped to
secure the fealty and friendship of the king of Scots.
Malcolm was slain by the men of Moray, in the north of Sco-
tia, in the year 954, and he left a son, who was killed in the
following year; but the precise time, place, or circumstances
in which this event occurred, is not certain. He had
two grandsons of the same name with himself; the one by his
son King Duffus, the other by his other son King Kenneth
sider.
The former was slain by his ambitious uncle Kenneth,
and never mounted the throne.
MALCOLM II., king of Scots, was the son of King King
Kenneth III., and inheriting the ambitious spirit of his
father, he set up a claim to the throne, in opposition to his
crown. He was the last in a pitched battle between the partitions of the two princes.
Malcolm succeeded in the year 1003. He reigned about
thirty years, the greater part of which period was spent in
warlike encounters with the Danes, who sought a settle-
ment in the north of Scotland. In the year 1015, Malcolm
obtained over these pirates, that Malcolm founded and en-
dowed a religious house at Mortlach, which afterwards
became a bishopric, and, at a still later period went to
frequent with other churches, the bishopric of Aberdeen;
and on the last occasion, he was accompanied by a
large retinue of nobles. He signed a treaty of obligations
between the church and clergy. His piety was accord-
ingly acknowledged and approved by the papal see.
Malcolm is also said to have been a legislator, and there is
a collection of laws which go by his name, but the authen-
ticity of many of these laws is very doubtful. He died in
the year 1033; and there is still shown in the church-
yard of Glamis, 'King Malcolm's grave-stone,' which
is a rude
mass, without any inscription, 16 feet high and 5 feet broad.
He appears to have had no son, but only two daughters,
the eldest of whom married King Duncan, who was killed
near Elgin in 1039, by a stroke of 'treasonous malice.'
MALCOLM III., king of Scots, was the son of the 'gra-
cious Duncan,' whose name has been immortalized in
pages of Shakespeare. On his father's death Malcolm fled
into England; but after the fall of Macbeth, and that
of his successor, he recovered his father's sceptre, and
was declared king in the year 1057; and, as Chalmers
recounts, he was the first that sat on the throne of the
nation known in history as Malcolm Canmore, or Malcolm Great-
head, probably from the wisdom and prudence of his
character. A contemporary bard gives him two epithets, the
one implying that he had a handsome person, the other
that he was a valiant warrior. Malcolm reigned 44 years his reign was undisturbed either by foreign or domestic
enemies. The accession of William Rufus however
proved the signal for hostilities between the two coun-
tries, and in an encounter with the English forces Malcolm
was surprised by Earl Howrey, on the 23d of No-
vember, 1053, in about the seventy-fifth year of his age.
MALCOLM IV., king of Scots, was the grandson
of David I., and on the death of that king, on the 24th
of May, 1153, he succeeded to the throne, being then on
the twentieth year of his age. He was content to
repress the insurrection of Somercot, Lord of the Isles, a
Hebdene chief of such great influence, that when a peace with him was secured, the event was deemed of sufficient importance to be the subject of special mention in the charters. The standard of rebellion was afterwards raised in Galloway, and Malcolm was obliged to lead a great force against Fergus, the lord of that country, whom he at length subdued. Malcolm had also a struggle with the men of Moray, who affected independence, and in 1161, he compelled them to submit to his authority. The powerful Somerled also again rose, and prepared to make another attempt on the dominions of the Scottish king; but the latter by his vigour triumphed over all of Scotland. The northern Soy was not of long duration, as he died of a lingering disease at Jedburgh, on the 9th of December, 1165, at the early age of twenty-four.

MA L

SIR JOHN, G.C.B. and K.L.S., was born at Eskdale, in the county of Dumfries, in Scotland, in 1769. He was sent to India, when he was only thirteen, under the care of his maternal uncle Dr. Paisley, and was appointed a cadet on the Madras establishment. He returned to England in 1794, for the benefit of his health, but sailed again to India the following year, and took an active part, as an inferior officer, in the war with the celebrated Tippoo. After the fall of Seringapatam he was appointed, jointly with Captain (afterwards Sir T.) Monro, secretary to the commissioners who were entrusted with the affairs of the province of Mysore. This province was already highly estimated by the British government in India, that he was sent in the same year (1799) to Persia on affairs of the most important nature.

On his return from Persia, in 1803, he was appointed principal secretary to the government of the government of the Persian deserts; but he was again sent to Persia in the following year, in consequence of the death of Hajed Kuleel Khan, the Persian ambassador, who was accidentally shot at Bombay. In February, 1803, he was nominated to the presidency of Mysore, and joined the army of General Wellesley in his campaign against the Mahrattas; but in 1805 he was recalled to Bengal, where he was occupied in the performance of the most active and responsible political duties, and particularly in revising treaties of alliance with several of the Indian princes.

In consequence of the extensive projects of Bonaparte, who was said to be meditating an invasion of India, and who had entered into an alliance with Persia, Malcolm was again sent to Persia in 1807, but was unable to obtain any advantages in favour of the British government. On his return to India, in 1808, he proceeded to his government in Mysore; but owing to a change in the policy of the Persian court, he was again appointed minister plenipotentiary to that nation, and received in the most flattering and distinguished manner. On his departure in 1810, in consequence of the nomination of Sir Gore Ouseley as his majesty's ambassador at the Persian court, Malcolm was restored to the presidency of Bengal, and appointed him a khan and sepoorah of the empire. Malcolm returned to England in 1812, and was knighted shortly after his arrival. In 1815 he published his "History of Persia," in 2 vols. 4to., which contained an account of the country from the earliest period to the time when the work was published. This work is extracted from native sources, and is the only account which we possess in the European languages of many portions of Persian history. D'Herbelot's narrative terminated with the reign of Shaddad, the last of the Sasanian dynasty. Malcolm was enabled for the information it afforded us respecting the religion, government, manners, and customs of the inhabitants of Persia in all periods of their history; and more particularly for his accurate account of the state of Persia in his own time, which was based upon his personal observation and diligent inquiries in the country.

Malcolm returned to India in 1817, and was, immediately on his arrival, attached, as the governor-general's political agent, with the rank of adjutant-general, to the Governor of Madras, Sir T. Hialop, at Deccan. He served under this general, as second in command, in his campaigns against the Mahrattas and Pindaries, and greatly distinguished himself in the decisive battle of Mehdipoor, in which Holker and Pimperelle, returning to the committee, president of the Board of Control, after moving the thanks of parliament to Sir T. Hialop, added, 'and to Sir J. Malcolm, who was second in command on that occasion, but who is second to none in valour and renown. The name of that gallant officer will be remembered in India as long as the British flag is hoisted in that country.'

After the conclusion of the war Sir J. Malcolm received the military and political command of Malwa and the adjoining provinces, where he remained four years. The central provinces of India were at that time almost in a state of anarchy; the plundering expeditions of the Mahrattas and Pindaries had reduced many fertile districts to complete deserts, and had thereby forced multitudes to adopt the same marauding mode of life; and the war, which had just been brought to a close, had thrown upon society multitudes of soldiers who had been trained to every species of bloodshed and rapine. Too much, however, cannot be attributed to the prudent and firm manner in which Sir J. Malcolm administered the government of these provinces; he was particularly successful in conciliating the affections of the natives, and reclaiming by mild and conciliatory means the remains of the Mahrattas and Pindaries, which were returned to their savage mode of life. When Bishop Heber visited this part of India, a few years afterwards, the inhabitants spoke of Sir J. Malcolm in the highest terms of respect and admiration, and eagerly desired to know when they might expect his return. An interesting account of this part of India was published by Sir J. Malcolm in 1823, under the title of 'A Memoir of Central India, including Malwa and the adjoining Provinces; with the History and Topographical Descriptions of the present and past Condition of that Country.'

Sir J. Malcolm returned to England in 1821; and on his quitting Madras a general order was issued by the governor-in-chief, containing the following well-merited compliment to him:—'His career to his country, and to his countrymen, for no other servant of the Honourable Company has ever, during so long a period, been constantly employed in the conduct of such various and important military and political duties, as Sir John Malcolm; and he is well known to admit of their being confined to the range of service under his own presidency. The exertions of them under different situations has connected him with every presidency, and rendered him the servant of any one of them than of the Indian empire at large.'

Sir J. Malcolm continued to remain in England till 1827, when he was appointed governor of Bombay; but he resigned this office at the end of three years, and again returned to England. He was elected, shortly afterwards, member of parliament for Leeds, and sat for that constituency as a supporter of the Reform Bill. He died on the 31st of May, 1833, of an attack of paralysis. A monument has been erected to his memory in Westminster Abbey, and also an obelisk, 100 feet high, in his native town of Eskdale.

In addition to the works of Sir J. Malcolm, which have been mentioned above, he also wrote an account of the 'Political History of India,' from 1784 to 1823, in 2 vols. 8vo., and published after his death, in 1846. (MEmorial of Sir John Malcolm, in 'The United Service Journal,' 1833.)

MALDIANIS, or MALDANIDE, the second family of sedentary Annamites in Lamark's system, including Clymenus and Dendytalum, which last is not an annelid, according to the latest and best authorities, but a mollusk. (DENTALID.) Sayvigny established the family.

MALDON, a corporate town of considerable antiquity, and a parliamentary borough, in the county of Essex, and the hundred and county of Essex. The town, which is eight miles east from Chelmsford and thirty-four miles north-east from London, is on the right bank of the Chelmer, a mile above its junction with the Blackwater, and consists of two principal streets, at right angles to each other; their cruciform figure has led some authors to suppose that the name of the town itself is derived from the Saxon Mosclyne, signifying a crossed hill. The circumstance of the town being an island, mainly owing to the construction of a canal, called the 'new navigation,' which commences at Colliins's Reach, one of the channels into which the Blackwater river is divided by Northey Island; and after passing through the village of Hadleigh, joins the Chelmer, and, near Hadleigh, continued to Chelmsford, and thus the town has been in a great measure lost. The haven is convenient, and vessels of 200 tons come up to the town during spring-tides. The foreign trade, which in 1820.
amonted to 3929 tons inwards and 2199 tons outwards, is declining; but the coasting trade, which in the same year amounted to 69,159 tons inwards and 44,111 tons outwards, appears to be on the increase. In 1823 the receipts of the custom-houses were £19,164; in 1832 they had declined to 7032.

The chief part of the property of the corporation has been alienated. The town-council consists of four aldermen and twelve councillors. The charters are numerous, and date from the reign of Henry II. (7th of October, 1155.)

The Church of All Saints is a very ancient edifice, surmounted by a triangular tower of singular appearance. For a description of its interior, and of the other antiquities of Maldon, the reader is referred to the first volume of Moran's History of Essex, folio, 1679, pages 327-337. The living consists of a sevencyre, a curacy, producing a net income of 310l. and 165l. a year respectively; the latter is in the patronage of the dean and chapter of Westminster.

The population of the borough, in 1831, was 3891. The grammar-school was founded by Alderman Bredere in 1609. It has been endowed by several benefactors with funds and landed property; and Dr. Plume, archdeacon of Rochester, and founder of the Plu"mian professorship of astronomy and experimental philosophy at Cambridge, bequeathed its use valuable to the library.

The library receives a contribution from the custom-house. Dr. Plume also established a scholarship of 6l. per annum at Christ College, Cambridge, to which boys from the grammar-schools of Chelmsford, Brentwood, and Maldon are successively eligible. Maldon has returned two members to parliament since the reign of Edward II.

(Wright's History of the County of Essex, 4to, 1833; Corporation Reports, &c.)

MALE BRANCHE, in the chiasma, incorrectly termed root of the human form by Félix Mas (Richard), Aspidium Felix Mas (Smith), has been celebrated from antient times as an antihelmintic. The rootstock of young plants should be collected in spring or summer, and a fresh supply obtained every year, as a change in the vegetable body of the plant is advisable. It should be quickly dried, and preserved in glass or earthenware vessels in a dry place. The interior should exhibit a greenish colour, and possess a disagreeable smell, with a bitter, harsh, astringent taste.

It consists of an oil, resembling castor oil, which may be extracted by sulphur and water; and resins, of which terebinth, sucrose, sugar, starch, and woody fibre. The oil, which is of two distinct kinds, one pure, and the other united with resin and an extractive, is the active principle. Formerly a powder of the whole substance was administered, but as the dose of this is bulky, Prichard has recommended the use of the internal extract, which are found to be very efficient against that kind of tape-worm which is denominated the Bothriocereus phalus, or broad tape-worm. It is scarcely possessed of any power over the Titanorrhiza, and the smaller species of the habitants of Europe, Asia, and North America are not affected by the remedy; but it is not much valued as an antihelmintic in Britain, the broad tape-worm being a very rare unknown in this country. It grows in the Fenias solitaria and in the B. Solium f. Bouchard.

The common mode of administering it is to give a certain number of pills at night, and a like number in the morning, followed by some brisk cathartic, as the male fern only kills, but does not expel the worm.* [Antelmintics]

**Malebranche, Nicolas, one of the most illustrious disciples of Descartes, who both gave to his master's views a wider development, and imparted to them clearness and vivacity, was born at Paris, 1638. Of a sickly and deformed habit, he passed his early career in retirement and the close study of languages and biblical literature. His attention was first directed to the pursuit of philosophy by accidently meeting with the work of the famous 'Descartes De Homine.' The perusal of this book led him to the discovery of surpassing all his contemporaries in a knowledge of its true spirit and tendency. As the result of his philosophical meditations, Malebranche published, in 1673, the first book of the 'Recherche de la Vérité,' which was quickly followed by the other five. There has been in several subsequent editions: the most correct and complete edition is that which appeared three years before the author's death, which took place at Paris, in 1715.

The philosophical writings of Malebranche are a model of a style at once elegant and perspicuous, in which the clearness of the thought is sacrificed to the grace of composition, or the ornamentals of language simplified. If the profound originality and absolute novelty and boldness of his arguments are exposed him to much opposition. Among the most famous of his opponents were Foucher, the Jesuit Du Ferrier, and Arnaud, who, like Malebranche, was also a member of the Oratory, and at one time had the professorship of philosophy, and afterwards the 'Recherche de la Vérité' is partly logical and partly metaphysical. On the one hand it investigates the sources of human error, which are reduced to three general heads—sensation, imagination, and intellect (esprit). On the other hand it attempts to establish some universal method for the investigation and discovery of truth. The source of error however lies not in any imperfection of the cognitive faculties, nor in any inaccurate or wrong employment of them, but in the will, which forms its own opinion of the object, and is, in a manner, associated with the object without, then error arises. Now all wrong perceptions are accompanied by pleasure or pain, which cheaply move the will, sensation is the principal source of error, and especially of those false systems of men who are at the best good for their owners, and not for the pleasure: for the sensibilities present to the mind nothing but a desperate good. whereas the only true and real good—the Duty—enables the pure intellect alone.

But the most distinctive characteristic of the system of Malebranche is the assumption by which he explained the possibility of knowledge. For as he followed Descartes in making extension to be the essence of matter, and discipline of mind, it was necessary for him to account for the possibility of the interaction of the mind with extension. The existence of ideas in the mind is, according to Malebranche, a fact not requiring proof; from this fact however he denies that it is necessary that objects corresponding to those ideas actually exist; for he observes the same process of ideas and combinations of ideas which do not exist. Indeed there is no greater hindrance to truth and knowledge than the erroneous belief that ideas refer to actually existing objects. Now all ideas may be classed under two heads; they are either internal, or external, and he says that the former are therefore mere modifications of the thinking soul, or they are relative to certain external objects of which the soul cannot be cognizant without the mediation of the mind. Now the latter refer to material or spiritual things, and the mind is capable of extending or contracting them at pleasure, and in time an innumerable number of objects may be created. Moreover this hypothesis does not account for the generation of the different distances of objects. Malebranche proceeds, in the next place, to refute the supposition that the ideas are images of the outward objects. This is as absurd as to suppose that a candle can delineate an animal which he has never seen described. Equally untenable is the explanation by innate ideas. For the number of ideas is not finite and it is also impossible to suppose that an infinity of ideas have been planted in the mind, of which however most minds are actually conscious of very few only. Besides, with such a supposition of innate ideas and innate ideas, there is no more alternative choice and again the supposition is ridiculous. Each operation of the mind leads the ideas to be created and rooted in the heart of God, and contradicted by the fact that the
Maldiva Islands, commonly called the Maldives, lie in the Indian Ocean, and extend nearly on one meridian. About 7° N. lat. to 4° 40' lat. or nearly 2000 miles; but in no part is the breadth of the chain supposed to be more than 50 miles in a direct line, although the most western limit of the most northern group, or Atoll, is in 7° 48' E. long. and the most eastern boundary of the chain in 7° 14' E. long. The most northern Atoll is about 350 miles from Cape Comorin, the nearest point of Hindustan. The appellation is derived from the language of Malabar, in which the Sanscrit stupa, "an island," is corrupted into deya, and which is the name of the largest of these islands, which is called Malé.

The sovereign of these islands stiles himself Sultan of the Thirteen Atolls and Twelve Thousand Islands, but Captain Owen believes the actual number of these islands to be much less; to the east it is narrowed down to 8° 30' lat. or nearly 600 miles; and to the north it is reduced to 2000 miles, and to the south it is narrowed down to 4° 40' lat. or nearly 2000 miles. The Atolls are surrounded by a bight of the sea, which, during the south-west monsoon is violently agitated, by narrow strips of coral-reefs, which surround them like a wall. This protecting wall in many places scarcely reaches the surface of the water; in other places it forms a long sandy beach, perhaps less than six feet above the level of the sea, and is either circular or oblong. Each of these circular enclosures contains breaks, which constitute convenient passages for vessels or boats to enter. The number of these coral reefs is in many parts very great.

The inhabitants of the Maldives, who are largely Mohammedans, are between one and a half to two millions in number. They are descendants of the ancient people of Aden, and the Atolls, and are divided into the following classes: the Maldiva Atoll, the Malé Atoll, and the Addu Atoll. They are divided into the island of Ceylon or the Bay of Bengal, the Maldives Islands lying across the direct route to these places. Two of these navigable channels are south of the equator: the Addu, or south channel, is between Pona Mulubque Atoll and Addu Atoll, and is about ten miles long, and its breadth is about five miles; the other channel, between the island of Aden and the Atoll Sundiva, which is ten leagues wide. North of the equator are the first, the One and Half Degree Channel, which is 17 leagues in length, and is formed by the Sudiva Atoll and the Adoumanis Atoll; it is the widest and safest of all these channels, and frequently used by ships proceeding eastward in the westerly monsoon. Farther north is the Colomandous
and they export from Bengal rice, which is not grown on the islands, sugar, silk stuffs, broad-cloth, hardware, and 
tobacco. They arrive at Calcutta in June or July with the 
south-western monsoon, and depart from that place in the 
middle of December with the north-east monsoon. 
(Horabgh, Owen, and Moresby, in the London Geogra-
phical Journal, vol. ii. and v.)

MALIC ACID has already been described under the 
name Malesherbes, in which the present appellation is given in 
consequence of its having been since procured by subjecting 
malic acid to heat. It is composed of—

One equivalent of Hydrogen
Four equivalents of Carbon
Three equivalents of Oxygen

Equivalent
49

The crystals contain one equivalent of
water . . . . 9

Equivalent
58

MALETOZOA/RIA, articulated Mollusca, the second 
subtype in the system of M. de Blainville. [MALACOLOGY, 
P. 234.]

MALESHERBES, CHRETIEN GUILLAUME DE 
LAMOIGNON, distinguished by his courage and misfor-
tunes, the associate of Turgot and those illustrious 
statesmen who sought by moderate and beneficial reforms 
to procure the welfare of the people of France, was born in 
Paris, 16th Dec. 1721. His father was chancellor of Paris, 
and Malesherbes, after finishing the course of legal study, 
was first appointed deputy to the procureur-général. 
Shortly afterwards he was elected a counselor of the 
parliament, and in 1754 was placed in the Cour des Aides. 
In this office, he on the one hand courageously 
resisted the extravagant expenditure of the court, and on 
the other put a stop to the frauds and peculations of the 
fermers-general of the revenue. When, in consequence 
of their investigation to the court, the parliamentaries were 
sterilized by Louis XV., the Cour des Aides was also abrogated, 
and Malesherbes retired to his country-seat, and employed him-
self in benevolent plans for the education and improvement 
of his vassals. Upon the restoration of the constitutional 
courts of the parliament, by Louis XVI., Malesherbes 
resumed his duties as president of the Cour des Aides; 
and in the following year (1775) he was appointed minister 
of the king's household. Upon the retirement of Turgot, 
Malesherbes also tendered his resignation to the king, 
which was accepted. The interval between this date and 
the troubles which preceded the outbreak of the Revolu-
tion Malesherbes devoted to a tour of inspection through 
his native country, Switzerland, and Holland, acquainting 
himself with the state of industry and the arts, and care-
fully examining the condition and efficiency of their pub-
lic institutions. He was again invited by the king to aid him 
with his counsel in 1787; but finding that he had no power, 
and that his advice was not listened to, he again retired 
just before the meeting of the states-general. When Louis 
XVI. was brought to trial, Malesherbes claimed the ho-
norable but dangerous post of his defender, and was asso-
ciated with Tronchet and Desèze. The fearless intrepidity 
of Malesherbes entailed upon him the hatred and suspi-
cions of the party in power, and, with several members of 
his family, he was sent to prison to death and guillotined on 
the 22nd of April, 1794, meeting his fate with cheerfulness 
and resignation.

The works of Malesherbes, who was a member of the 
French Academy, are Belles Lettres and Inscriptions, are 
mostly on subjects of natural history, and rural economy. His 
"Discours et Remonstrances," printed in 1779, are still quoted as authorities on financial 
questions. His "Mémoire sur la Liberté de la Pressé" par-
ticipated in the attention given for the first time to this 
question; and it takes upon this difficult question, the more especially as 
the tolerance and liberty which it advocated had been 
practised by himself when the surveillance of the press was 
entrusted to him. On this ground he incurred the censures of 
the ultra party, and La Harpe expressly ascribes the bitterness 
of the Revolution to the facility of publication under 
Malesherbes' ministry of the press. After the Restoration 
a monument to the memory of Malesherbes was erected 
by Louis XVII. in the hall of the Chamber of Justice, with 
the inscription, "Serenus semper fidelis regi suo, in 
velo veritatis, præsidium in carceri aevit."
of any of those materials mixed with each other or with any other material; or looms, frames, machines, engines, racks, tackles, or implements prepared for or employed in manufacturing or preparing such materials, or carrier by force into any place with intent to commit any of those offences. By section 4, it is made felony punishable by transportation for seven years, or imprisonment not exceeding two years, with or without whipping in the case of a male, to cut, break, or destroy, or damage with intent to destroy or to render useless, threshing-machines, or machines or engines prepared for or employed in manufactures, except those manufactures, &c. injuries to which are more severely punished under the 5th section.

By the 6th and 7th sections it is made felony punishable by transportation for seven years, or by imprisonment not exceeding two years, with or without whipping in the case of a male, to cause water to be conveyed into mines, or submarine passageways, or into sluices, or to pull down, fill up, or obstruct air-ways, water-ways, drains, canals, or shafts, with intent to destroy, damage, or hinder or delay the working of mines; or maliciously to pull down, or destroy, or damage with intent to destroy or render useless, deposits or water near mines, or shafts, buildings, or erections used in conducting the business of mines or bridges, waggon-ways, or trunks for conveying minerals from mines, whether completed or unfinished. By sect. 12 it is made felony punishable by imprisonment not exceeding four years, with or without whipping in the case of a male, to break down or cut down sea-banks or sea-walls, or the banks or walls of rivers, canals, or marshes, whereby lands are overflowed or damaged; or to destroy locks, sluices, floodgates, or works on navigable rivers or canals. And by the same section it is made felony punishable by transportation for seven years, or by imprisonment not exceeding two years, with or without whipping in the case of a male, to cut off, draw up, or remove earth, clay, sand, gravel, chalk, or other materials fixed in the ground and used for securing sea-banks or sea-walls, or the banks or walls of rivers, canals, or marshes, or to open or draw up flood-gates, or to obstruct or prevent the working of any canals, with intent or so as to obstruct or prevent the carrying on or completing or maintaining the navigation.

It is made felony punishable by transportation for life, or not less than seven years, or by imprisonment not exceeding four years, with or without whipping in the case of a male, to break down or destroy dams of fish-ponds, or of water being private property, in which is a live fish, for exposing a live fish, for taking or destroying a live fish, or for causing the loss or destruction of fish, or for putting lime or noxious materials in ponds with intent to destroy fish, or to break down or destroy dams of mill-brooks. By section 16 it is made felony to kill, maim, or wound cattle, or to cause them to be killed, maimed, or wounded, or to break or destroy, or damage with intent to destroy or render useless, any farm-worked implements; or to cut, break or destroy, or render useless wares or shoots of silk, woollen, linen or cotton, or

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some of which exist in nature, as for example, supersalts of lime is found in the juice of the houseleek.

According to Liebig, male and citric acids are isomeric bodies, being capable of interchanging hydrogens.

Two equivalents of Hydrogen 2
Four equivalents of Carbon 24
Four equivalents of Oxygen 32

Equivalent 58

The crystals contain one equivalent of water; whereas those of citric acid contain different proportions of it, according to the circumstances under which they are formed.

When maleic acid is subjected to a heat of about 350° F., it is converted into malic acid, and the results are two isomeric pyro-acids and water, which are the maleic or quiescent and the furonic or pyroamic acids.

The malates are not an important class of salts: we shall mention the general properties of the following.

Malate of potash is a deliquescent mass; the supersalts form crystals which are unalterable in the air and insoluble in alcohol. Malate of potash is a deliquescent mass; the supersalts form crystals which are unalterable in the air and insoluble in alcohol. Malates in large dular-salts; the supersalts crystallize. Malate of lime is sparingly soluble in water, requiring 147 parts of it cold, and 63 when boiling; the hot solution deposits crystalline grains or needles. It is stated to be more soluble in some saline solution than in water. Solution from the transportation for life, or not less than seven years, with or without whipping in the case of a male, to break down or destroy dams of fish-ponds, or of water being private property, in which is a live fish, for exposing a live fish, for taking or destroying a live fish, or for causing the loss or destruction of fish, or for putting lime or noxious materials in ponds with intent to destroy fish, or to break down or destroy dams of mill-brooks. By section 16 it is made felony to kill, maim, or wound cattle, or to cause them to be killed, maimed, or wounded, or to break or destroy, or damage with intent to destroy or render useless, any farm-worked implements; or to cut, break or destroy, or render useless wares or shoots of silk, woollen, linen or cotton, or
for life or not less than 15 years, or by imprisonment not exceeding three (sect. 10), to set fire to any stack of corn, grain, pulse, tares, straw, flax, stubble, fuzze, heath, fern, hay, turf, peat, coals, charcoal, or any steer of wood, or (sect. 11) to set fire to any mine of coal or peat.

The enactments in this statute with respect to the burning of houses, &c. [Aison] have been repealed; and now by 7 Wm. IV. and 1 Vict. c. 89, sect. 2, it is felony punishable by death to set fire to a dwelling-house, any person being therein, and by sect. 3 is felony punishable by transportation for life, or not less than 15 years, or by imprisonment not exceeding three, to set fire to a church or chapel, or a chapel for the religious worship of dissenters, or to a house, stable, coach-house, outhouse, warehouse, or any house, barn, or granary, or to any building used in carrying on trade or manufacture, whether in the possession of the offender or of any other person, with intent to injure or defraud any person.

For the protection of shipping against malicious mischief several statutory provisions have been made. By sect. 2 of Geo. IV. c. 75, sect. 11, it is felony punishable by transportation for seven years, or imprisonment for any number of years, to cut away, cast adrift, alter, deface, sink, or destroy, or do any act with intent to cut away, cast away, alter, deface, sink, or destroy, or to cause or procure such concealed buoys, buoys-ropes, or marks belonging to ships or vessels, whether in distress or otherwise. By sect. 4 of Geo. IV. c. 30, sect. 10, it is made felony punishable by transportation for seven years, or by imprisonment not exceeding two, with or without whipping, to cut away, cast away, or sink, or otherwise than by fire (which offence had been made capital by sect. 9) ships or vessels complete or unfinished, with intent to destroy them or to render them useless.

By sect. 89, c. 89, it is made felony punishable by death to exhibit false lights or signals with intent to bring any ship or vessel into danger, or to do any thing tending to the immediate loss or destruction of ships or vessels in distress. And by sect. 6 it is made felony punishable by transportation for life, or by imprisonment not exceeding three years, to set fire to, cast away, or destroy ships or vessels, with intent to prejudice owners or part-owners of vessels or goods, or underwriters, on ships, goods, or freight. And by the 4th sect. it is made felony punishable by death, to set fire to, cast away, or destroy any ship or vessel, with intent either to murder any person or whereby the life of any person shall be endangered.

Besides the criminal responsibility thus created in respect of acts of pollution above enumerated, the legislature has given summary relief to persons whose property has been subject to petty but wilful aggressions. The last enactment on this subject is sect. 7 and 8 Geo. IV. c. 30, sect. 24, under which persons willfully or maliciously committing damage, injury, to any property, may be convicted of a summarily capital offence, for which no remedy or punishment is specially provided by that act, are, on conviction before a justice of the peace, to forfeit and pay such sum of money as shall appear to him a reasonable compensation for the damage, injury, or spoil committed, not exceeding 3l. 6s. 8d. in the case of private property, to the party aggrieved, except where such party is examined in proof of the offence; and in such cases or in the case of property of a public nature, or wherein any public right is concerned, the moment may be applied towards the county-rate or borough-rate; and if such sums of money together with costs (if ordered) are not paid either immediately or within such period as the justice may appoint, the justice may commit the offender to the common gaol or house of correction, to be kept in hard labour for any term not exceeding two calendar months, unless such sum and costs be sooner paid. This enactment does not extend to any case where the party trespassing acted under a fair and reasonable supposition that he had a right to do the act complained of for his tressess, not being wilful and malicious, committed in hunting, fishing, or in the pursuit of game.

By the 28th section any person found committing any offence against this act, whether punishable upon indictment or upon summary conviction, may be arrested, apprehended without a warrant, by any peace-officer, or the owner of the property injured, or his servant, or any person authorized by him, and forthwith taken before some neighbouring justice of the peace.

These summary proceedings before magistrates must be commenced within three calendar months from the commission of the offence.

The provisions of the law with respect to malicious injuries to property are to be found in the 3rd sect. of 1 Wm. IV. of the Code Penal entitled "Degrads, Damages." Capital punishment is denounced only against those who set fire to buildings, ships, warehouses, wood-yards (chantiers), forests, underwoods, or corn growing or cut down, or to any combustible matter placed so as to communicate fire thereto. Minor offences in forests are provided for by titre 12 of the Code Forestier.

MALINES. [Mechlin.] Malleability is that property of certain metals which admits of their being extended by the blows of a hammer or by rolling. The following metals exceed other metals; thus the gold-leaf sold in books is extremely thin, that less than 5 grains cover about 2 square inches, and the thickness of each leaf does not exceed 13000th part of an inch. Metals which are malleable are also ductile, that is, they may be drawn into wire.

According to Dr. Thomson, malleability and ductility seem to depend upon a certain quantity of latent heat; the metals which possess those properties. During the hammering they become hot, sometimes even red hot; and after this many of them become brittle, owing to the flying out of the latent heat which they contained. By annealing, which consists in heating them artificially and allowing the heat to spread through them, and they renew their malleability and ductility; and thus it is that which has been made hot by hammering loses its malleability, and cannot be again hammered till it has been annealed.

MALLARCEA, or MALLEIDÉ, C., a family of Montes-arian Conchifers according to the system of Lamarck is the genus of which are to be found in the family Maltitacea of De Blainville. They belong to the Molluscs, Cuvier, and the Oxycones of Latrielle. Lamarck made the family consist of five genera only:—Cenatula, Arma, Malaleus, Avcula, and Melagrina.

Animal, with the mantle non-adherent, entirely open its whole circumference, without tube or particular opening prolonged into irregular lobes, especially backwards. Shell black or horn colour, inequivalent, very irregular; hinge without teeth; marginal layer sublinear, simple, or interrupted by crenulations; muscle impression subcentral, fixed generally by a byssus furnished by tenter, definite, sin, or such animal.

M. Rang places the fossil genus Podontia as the best of the family, so that the position of that genus is approximated to Lima, which is arranged as the last of the Pteotideae.

General. Podontia (Bronn).

Animal unknown. Shell very delicate, nearly membranous, equatorial, oblong, rounded, not gaping; cardinal beak straight, a little prolonged on each side, so as to be surmounted; hinge toothless; no pit for the ligamentum nor passage for a byssus.

Podontia (from specimens in Irish Museum).

M. Rang remarks that this genus had been recently (1829) established for impressions sufficiently common on the schists of Dillenburg, and which some naturalists have been tempted to refer to rudimentary shells of Ayensis Pleurobranchs. M. Rang agrees with M. Bronn.

—MAL.
that these are the impressions of bivalve shells, and assigns to Psaidonis the position above stated. M. Deshayes however, in the last edition of Lamarck (1836), does not mention the genus among the Malleacea.

Vulsella. (Lam.)

*Animal* elongated, compressed; *mantle* very much prolonged backwards, and bordered with two rows of papillary tubercles which are very close set; *foot* small, canaliculated, without a byssus; mouth large, lamellated appendages very much developed and triangular; branchiae narrow, very long, and united nearly throughout their extent.

*Shell* subconeous, delicate, elongated, flattened, irregular, inequilateral, subequivalve, the umbones nearly anterior, distant, and a little recurved; *hinge* toothless, and offering only on each valve a projecting callosity comprehending a pit for the insertion of the ligament; *muscular impression* subcentral.

**Geographical Distribution of the Genus.**—The seas of warm climates, more particularly those of the East Indies, though some species are found westward, as at the Antilles, Cape Verd, and the Azores. The species are moored to the rocks and mangrove trees by means of their byssus, and have been found at depths ranging from the surface to ten fathoms.


Perna Isognomum.

a. Valves closed, showing the byssus; b, inside view of valve, showing hinge and muscular impression.

Malleus. (Lam.)

*Animal* considerably compressed; *mantle* prolonged backwards, and fringed with very small tentacular appendages; *foot* very distinct, canaliculated, and furnishing a byssus; buccal appendages spherico-triangular; *branchiae* short and semicircular.

*Shell* foliated, black or cornaceous, subnacreous, subequivalve, inequilateral, very irregular, often auriculated, and presenting a hammer of T shape; umbones not distant; an oblique notch in front for the passage of a byssus; *hinge* linear, very long, toothless; with a conical oblique pit, partially external, for the reception of the ligament, which is triangular and subexternal; *muscular impression* of considerable size and subcentral.

**Geographical Distribution of the Genus.**—East and West Indies (Guadaloupe and Martinique) and Australasia. Found at depths ranging from the surface to seven fathoms. M. Rang speaks of the species from Guadaloupe and Martinique as having occurred at great depths. The species, which are not numerous, are moored by their byssus to submarine rocks, &c. They are very variable, and indeed M. Deshayes observes that he never saw any two individuals of a species alike. Age makes a considerable change in the shape of the shells, especially in the auricles.

M. de Blainville divides the genus into three sections:—1, consisting of species scarcely auriculated (*Malleus vulsellatus*); 2, consisting of uniauriculated species (*Malleus normalis*); and 3, consisting of biauriculated species (*Mala*;
M. Deshayes thinks that the greater part of the individuals occurring in collections under the name of *Mallois vulgaris* may be the young of the variety of *Mallois vulgaris* with short ears, and he considers *Mallois vulgaris* and *Mallois ananins* as identical.

**Example, Mallois vulgaris.** **Locality.**—East Indian and South Seas.

Mallois vulgaris.

*Valves closed, showing the byssus; a, inside view of valve, showing the hinge and muscular impressions.*

Gervillia (Fossil only).

(See the article, vol. xi.)

**Inoceramus.** (Fossil only.)

See the article, vol. xii. Though some malacologists consider *Inoceramus* and *Catillus* to be identical, M. de Blainville, M. Rang, and M. Deshayes consider them as distinct species, and as belonging to this family. M. Deshayes gives the following description of *Inoceramus*.

**Shell.** Gryphoid, inequivalve, irregular, subequilateral, with a lamellar shell, pointed anteriorly, and enlarged at its base; umbones opposed, pointed, and strongly recurved; **hinge** short, straight, narrow, and forming a right angle with the longitudinal axis, with a series of crenulations gradually smaller for the reception of a multiple ligament. **Muscular impression unknown.** The species are of moderate size.

Inoceramus vulgaris, nat. size; from the Folkstone blue marl. The smaller specimens show the hinge of one valve, the other valve being a cast.

**Localities.**—Dr. Mantell records several species in the **Chalk**, two in the **Chalk-marl**, two in the **Gault** or **Folkstone Marl**, and one (from Martin) in the **Shanklin Sand** (Lower Green-sand). (Organ. Remains of Sussex, 'Geol. Trans.,' 1829.) N.B. Some of the species in the chalk—*Inocerami Brongniarti, Lamarchi, and Mytiloides—are not included. Professor Phillips records three (one a Catillus) in the **White Chalk**, one in the **Red Chalk**, and one in the **Lias** (Geology of Yorkshire.) Mr. Lonsdale notices two in the **Lower Chalk** (Oolite District of Bath). Dr. Fitch records six named species and one undetermined from the **Upper Green-sand, Gault, and Lower Green-sand.** (See, between the Chalk and Oxford Oolite, in Geol. Trans., 1844.)

**Example, Inoceramus vulgaris.**

*Catillus.* (Brong.)—(Fossil only.)

M. Deshayes thus defines *Catillus*, which is referred in this work from that title to *Margaritacea; we however agree with the authors above quoted in thinking this the proper place for the genus.

**Shell.** Sometimes flattened, elongated, or subangular, sometimes convex, cordiform, subequilateral, imbricated, with umbones more or less projecting. **Hinge** straight, a little oblique or perpendicular to the longitudinal axis, its border furnished with a row of small ctenes which are very short and gradually increasing; **structure of shell fibrous; muscular impression unknown.**

M. Deshayes observes that among the genera proposed by Mr. Sowerby in his Min. Cos. there is one to which he has given the name of *Pachymyta*; this genus appears to M. Deshayes to possess all the external characters of *Catillus*, and he states that he has been led to remark the approximation of that genus to *Catillus* by studying a few specimens in the collection of M. Duchatel. M. Deshayes proceeds to observe that M. Brongniart has established a genus under the name of *Mytiloides* for those *Catillus* which are very much elongated, and that consequently the genus *Mytiloides* cannot be retained. The genus *Catillus* thus reformed by M. Deshayes, will consist of the genus *Pachymyta*, *Mytiloides*, and *Catillus*. Some of the *Catillus* are of enormous size, and are mentioned as being as many feet in length. M. Deshayes thinks that the animals of *Inoceramus* and *Catillus* both wanted a byssus.

**Localities.**—The **White Chalk** in England and France. **Example, Catillus Cuvieri.**

Catillus Cuvieri.

*Catillus vulgaris.*

*The hinge.*

*Pulvinites.* (De Freancy.)—(Fossil only.)

Animal unknown.

Shell delicate, rounded, equatorial, sub-elliptical, with the umbones inclined a little forwards; hinge composed of eight to ten divergent teeth, forming many pits.

The genus *Acula*, which is placed by Lamarck among his *Mollusca* under the name of *Molluscaea*, is described by him as a species of the subgenus *Acula*, containing the subgenera *Acula* (properly so called) and *Molluscaea*. See the article *Acula*, vol. ii., to which we think it right to add the description of the animal by M. Deshayes.

Animal oval, flattened, having the lobes of the mantle separated throughout their length, thickened, and fringed on the edge of the mantle as they are in the *Sutacca*; *Acula* may be distinguished by the large branchiae, nearly equal; mouth oval, rather large, with foliaceous lips, and with a pair of labial palps on each side, which are large and obliviously truncated; foot conical, uniform, rather long, with a rather large byssus composed of stout filaments, united in some species, at its base.

M. Deshayes also concurs in merging the genus *Molluscaea* in that of *Acula*, which, according to M. Deshayes's definition of the genus, will contain also the fossil genus *Monteis de Brion*.

FOSSIL MALLEIDE.

Those species which are fossil only are noticed above.

*Voluta.*—M. Deshayes, in his Tables (Lyell), gives the number of species found Bolingbroke, and in the same year. In the last edition of Lamarck he makes the species six, with no addition to the fossil species. (Grignon, Lamarck, Paris, Deshayes.)

*Perna.*—The number of recent *Perna* given by M. Deshayes is added to some species already found in recent and four fossil (tertiary). In the last edition of Lamarck he makes the number of recent *Acula* twenty-one, and the number of fossil species six. (Paris, Grignon, Lamarck, Paris, Deshayes.)

*Perna.*—The number of recent *Perna* given by M. Deshayes is added to some species already found in recent and four fossil (tertiary). In the last edition of Lamarck he makes the number of recent *Perna* twenty-one, and the number of fossil species six. (Paris, Grignon, Lamarck, Paris, Deshayes.)

Professor Phillips records species in the Coralline Oolite and Calcareous Grit, in the Oxford Clay, Kellaways Rock, Bath Oolite, Inferior Oolite, and Marlstone. (Geology of Yorkshire.)

Mr. Lonsdale notices species in the Old Red Sandstone, Lower Greensand, and the Caradoc Sandstone.

MALET, DAVID, was born about the year 1700, at Chief, in Pershore, where his father, whose name was James Maletic, and who was said to have been one of the adherents of the Jacobite party, kept a small public-house. He is supposed to have been first sent to college at Abercorn, but afterwards studied at the university of Edinburgh; and he was attending the classes there and supporting himself by private teaching, after the custom of the Scotch students, when, on the recommendation of the professors, he was appointed tutor to the sons of the duke of Montrose, with whom he made the tour of Europe. He first became known as a writer by the publication of his ballad of 'Margaret's Ghost,' or, as it was originally entitled, 'William and Margaret,' which appeared anonymously in the 36th No. of the *Lochaber* in 1714. That this has been some controversy however as to Mallet's claim to be the author of the re-casting of this famous ballad. (See Percy's *Reliques of antient English Poetry.* 1794, iv. 332-336, where the ballad is given in the shape in which it was finally published.) See his collection of Scotch and English ballads, 'Hive,' a collection of songs, vol. i., 1724, where, at p. 169, it is given as it had appeared the same year in the 'Plain Dealer;' 'The Hive,' vol. iii., published in 1725, where, at p. 157, is given the other poem, which has occasioned the most controversy among writers of Mallet. *Reliques of antient English Poetry,* 1773, vol. i., where the attempt was first made to convict Mallet of plagiarism. He now laid aside his paternal name, and took that of Mallet, which he probably imagined had more of an English sound, and was better suited to his ambitions. He was taken for a native of South Britain: the earliest known mention of him under his new name in print is said to occur in 1726. In 1728 he published his poem of the 'Excursion,' in 2 canes; and in 1729 his tragedy of 'The Duke of Northumberland,' in 3 books. In 1731 his tragedy of 'Mustapha' was acted at Drury-lane, with much applause, for the greater part of which however it was probably intended. At the age of twenty-one, by the assistance of Lord Bute, and acting at Drury-lane, in 1751, with no great success. Of Mallet's remaining writings, the principal are, 'A Life of Bacon,' of very little merit, prefixed to an edition of Bacon's Works, in 1740; his poem of the 'Old Lady and the Young Man,' 1747; and his tragedy of 'Elvira,' acted at Drury-lane in 1763. To this last a political meaning was at least ascribed by the public, and one that was not to the advantage of the play, for Mallet had now become a supporter of the administration of Lord Bute, who, soon after this, and, as it was said, by way of especial reward for his particular service, gave him a place in the Custom-house. Mallet was besides already in the receipt of a pension, which he had earned some years before from the same administration, by the assistance of Lord Bute, which he gave in directing the tide of the public rage against the unfortunate Admiral Byng. Two other transactions complete the history of his venal literary career: the first, his acceptance of a legacy of 1000l. left to him by Sarah, daughter of Marlborough, as the price of a Life of the great Duke, of which he never wrote a line; the second, his basely ungrateful attack upon his newly deceased patron Pope, at the instigation of his living patron Bolingbroke, in the affairs of the latter's 'idea of a Patriot King.' [Note in the *Geog. and Stat.*] But Mallet's chief connexion with the House of Lords was in the end rather a loser than a gainer by Bolingbroke's bequest to him of the property of his works, which was his pay for this exposure of himself; he refused the book-collector's offer of an annuity for the works, and then published them on his own account.

Mallet was an avowed freethinker or infidel, and indeed he does not seem to have half much principle of any kind. He was vain not only of his literary talents, but of his short, as some said, is described as elegant and handsome before he became somewhat corpulent, and which he was accustomed to set off with all the advantages of dress. He appears to have made a considerable figure in society, and even Johnson admits that his conversation was spirited and elegant. He married twice married; first to a lady by whom he had, besides other children, a daughter, who married an Italian gentleman named Cilesa, and wrote a play called 'Almida,' acted at Drury-lane in 1771; secondly, to a Miss Elston, by whom he got a fortune of 10,000l. He died possessed of considerable property, 21st Vol. XIV.—2 X.
The geology of Mallorca is but imperfectly known. Granite and porphyry are said to be found, but the general structure of the rocks is of secondary or tertiary formation. There are slate, fine marble of various colours, with abundance of sandstone, freestone, and chalk. Seams of coal have been discovered, but have not been worked. There is much coal in the bay of Alcudia. Salt is procured by the evaporation of sea-water in the low grounds about Campos; and in the same district is a warm sulphur spring, famed for a efficacy in removing cutaneous complaints.

The historical evidence of the island, according to Strabo, Phoenicians, the island fell with Spain successively into the hands of the Carthaginians and Romans; after being taken by Metellus, surnamed Barcino, in 175, a colony of 10,000 Romans from Spain was established there. In A.D. 42 it was made a Roman province.

In A.D. 798 it was conquered by the Arabs; and the being several times taken by the Christians and retaken by the Mohammedans, it was finally wrested from their hands in 1229 by James, king of Aragon; and since the union of the crowns of Castile and Aragon, it has retained subject to Spain.

The population, though much decreased since the time of the Moors, is still about 140,000. Palma and Alcudia are the only towns of note.

Palma, the capital, which was one of the two principal towns in the time of Strabo, is on the south coast of the island, picturesquely situated on a slope of the bed of a deep bay, ten or twelve miles wide, and formed by the coast of Mallorca and the island of Cala Figueres. The city, though walled and fortified, could not support a regular garrison; its population is about 33,000. The streets are in some parts narrow and mean, in others wide and regular; the houses are brick and without external ornament, mostly in the Moorish style of architecture, and many are built of marble. Palma is the seat of a bishop, who is a suffragan of Valence. Palma is a cathedral, a large Gothic edifice of much simple beauty, was built in the beginning of the thirteenth century by James the Conqueror, who is interred with his wife, Margaret, queen of Castile, and the latter is buried in the church of St. Mary. The cathedral was founded a university here in 1432. The other public buildings are the episcopal palace; the royal palace, a very antient edifice, the residence of the captain-general, or governor of the island, comprehending also an arsenal, a magazine, and a prison for political犯人, and the houses of the bishop and the principal magistrates. For the government of Mallorca, a council of five is elected by the Council of 145; the annual income of the island is upwards of 120,000 dollars.

Alcudia, the other city of Mallorca, is on the north coast, on a neck of land between the two bays of Alcudia and Pollenca. It stands on a rising ground and is a fortified town with ancient walls of great height. Some centuries ago, it was a large and flourishing city, but is now in a state of decay, with a population of only 1000 souls. The town is built of white stone, and is 6,800 inhabitants; Manacor, with 7000 inhabitants; Pollenca (the Pollentia of Strabo), with 6000 inhabitants; Fornax, with 6000 inhabitants; Sao, with 8000 inhabitants; and Portals, with 4000 inhabitants or more. Alcudia is the seat of a bishop. The country about Alcudia is much more fertile than that about Palma; there are fewer towns of smaller size, in all three in number. There are also numerous villages.

The manufactures of Mallorca are linen cloths (coarse and fine), silk stuffs, and woollen goods, as tapestry, bial, and velvet. Cotton goods, hemp, and flax are also manufactured. The chief industries of the people are made brooms and baskets. The exports are of wine, tables, fruits (fresh and dried), wines, brandy, cheese, and woolen goods. Most of these are taken by Spain: some by Sardinia, Malta, England, Holland, France, and the States-General of the Netherlands. The imports, which in value are a small proportion to the exports, are corn, salted fish, sugar, coffee, spices, tobacco, rice, cuttle fish, and wax goods, and articles of clothing.
MALLOW, the common name of the wild species of the genus Malva, and of the town in Surrey.

There are two common weeds of this genus, with flat, ribbed, mucilaginous fruits, enclosed in a valuate calyx, and not unlike a small round cheese, on which account they have in England the vulgar name of Cheese, and in France of Fœvilles (the modern history). This appears to have been begun after the death of Henry I. 3. "De Gestis Pontificum." (The history of the prelates of England), containing, in four books, an account of the bishops and of the principal monasteries, from the conversion of the English by St. Augustine to the year 1123, a fifth, on the "Gesta Aloldelmi," completed in 1125. 5. "De Vita Dunstani," in two books, extant in the Bodleian Library, MS. Rawlinson, 263, written at the request of the monks of Glastonbury.

MALONE, Edmond, was born at Dublin in 1741. His father was one of the judges of the Court of Common Pleas in Ireland; and the subject of this notice, having taken a degree in the University of Dublin, was called to the Irish bar in 1767. Mr. Malone was however devoted to literary pursuits; and an independent fortune having devolved upon him, he took up his residence in London, and became an intimate of the more eminent literary men of that day. His works were written by Johnson and other leading wits; and he came distinguished, principally as an editor of Shakspere. His first publication, connected with this favourite subject, was that of a Supplement to Steven's edition of 1778, in 2 vols. This contains Shakspere's sonnets and other poems, which, by various and false conjectures, have been rejected from his works—we mean "Sir John Oldcastle," "Locrine," &c. It also includes "Pericles," which has subsequently found a place in the various editions. Malone displayed in this work many qualities which in some degree fitted him to be an editor of Shakspere's undoubted works; and in 1790 he brought out an edition of his own. He had previously contributed some notes to Steven's edition of 1785. There were essential differences of opinion between John and Malone, which would have rendered their co-operation perhaps impossible. Steven's carried his disregard of the authority of the text of the old editions to an extravagant length; Malone, on the contrary, had a proper deference for that authority. Steven's wore it especially out of the first folio; Malone, in a much greater degree, respected it: Steven's was coarse and even prurient in his editorial remarks; Malone was cautious and inoffensive: Steven's had the more scurrility; Malone the greater common sense. Steven's published one rival edition, and Steven's quarrelled with him for ever. In Malone's edition, his History of the Stage was, for the time at which it was written, a remarkable performance; and his Essay on the Cunnings of the three Plays of Henry VI. displayed that accuracy and discrimination. The most striking qualifications which he exercised as an editor of Shakspere were equally exhibited in the part which he took in the controversies as to the genuineness of the Rowley papers, and the Shaksperean papers published by the Irishmen. He was among the first to proclaim his belief that the work attributed to Rowley were the production of Chatterton. The imposition of William Henry Ireland was very clearly pointed out by him in a letter addressed to Lord Charlemont. His tract contains many interesting reflections into our earlier literature, and is worthy of being studied by historians, to amidst the mass of nonsense which this controversy called forth. Malone also published, in 1797, the posthumous edition of the works of Sir Joshua Reynolds, with a life of the author, by Mr. Rowley, his intimate friend Mr. James Boswell, in 1821, in 2 vols. Of Malone it is not, perhaps, very high praise to say that he was not out of doubt the best of the commentators on Shakspere. He is, compared with his predecessors, more trustworthy in his attention to facts, much more careful to interpret what he found in the text than to substantiate his own conjectures. But he belonged to an age when the merits of Shakspere were not properly appreciated: and is, like the rest of his brethren, cold andcaptious. He was a regular school which, to a great extent, is fortunately extinct.

MALOPE. A genus of Malvaceous plants, consisting of two species, one of which is commonly cultivated as a favourite hardy annual. This plant, Malope malopes, belongs to the same natural order as the Malva. It is distinguished by the yellowish, brownish, conical, hard, rough seeds, which it ornaments with its large crimson flower. It is also met with in Sardinia and other parts of the west of Europe. The genus differs from Malva in having carpels distinct, and having irregularly over a central receptacle. The leaves are simple. Three or perhaps four other species are known to botanists. MAULONIES. [FALKLAND ISLANDS.] MALPAS. [Cheshire.] MALPUS, Marcellus, was born near Bolgna, in 1621. He studied medicine in that university, and in 1633 received his doctor's degree. His chief instructor in anatomy was Massari, at whose house he told us that and a few other select students were accustomed to meet, and discuss the important discoveries of the day. In 1650 he was appointed professor of medicine at Bologna, but soon after resigned on being invited to similar office in the university of Pisa. Here he became intimate acquaintance with Borelli, the professor of medicine, who resided there, and from whom he often received his gratitude for the kindness and instruction which he was so grateful for, and which he was always ready to return. He was summoned to Messina, where he held the professorship of medicine for four years. He then again resided near Bolgna, in 1651, when he was summoned to Rome, and appointed chief physician and chamberlain to Innocent XII. In 1654 he died of apoplexy.

Malpighi is now chiefly remembered in connection with his discoveries in the anatomy of the skin and of the secreting glands. He first described clearly the structure of the tongue, showing that it is at once a muscular and a sensory organ, and that the points of the tongue, as it were, are the tips of the sensory papillae, which are the real organs of taste, and the chief organs of the touch. In the coloured portion of the tongue of the ox he had first discovered the retia mucosum, or, as it is often called in his honour, rete Malpighi. But forwards showed a similar membrane on the rest of the tongue. He proved, as before, that the colour of the skin depends on this substance, the retinae of white and of coloured races being always of the same hue. [SKIN.]

On the structure of the secrete glands, Malpighi was long engaged in a discussion with Ray, maintain-
Vegetable is effected then certain about begins minute orifices into the ducts of the glands. The point was the Galphimias and climbing species of Hima and Basilia; a few only are useful. The bark of Malpighia Mourea and crassifolia is a kind of febrifuge. The fruit of Malpighia glabra is the Barbadoes Cherry of the West Indies: it varies in size, from that of a large pea to a small cherry, is smooth, shining, and has three triangular stones; its flesh is juicy and sweet, but insipid. The fruit of Malpighia coccigera, or Lotus-berry of the West Indies, is of much better quality: it is yellow, and contains a single stone. A few kinds produce timber of a bright yellow colour.

The order is nearly related to the Acanthaceae, or Sycamores of colder climates, differing in little except the time of division of the fruit, the symmetrical flowers with unguiculate petals, and the pendulous or suspended seeds.

MALPLAQUET. [MARLBOROUGH, DUKE OF.]

MALT is grain, usually barley, which has become sweet and more soluble from germination in water from the conversion of its starch into sugar by artificial germination to a certain extent, after which the process is stopped by the application of heat.

For the following short sketch of the process, which is called malting, we are chiefly indebted to a valuable work on 'Vegetable Chemistry,' recently published by Dr. Thomson, of Glasgow.

The barley is steeped in cold water for a period which (as regulated by law) must not be less than 40 hours; but beyond that period the steeping may be continued as long as it is thought proper. Here it imbibles moisture, and increases in bulk; at the same time a quantity of carbonic acid is emitted, and a part of the substance of the barley is dissolved by the steep-water. The proportion of the water imbibed depends partly upon the barley, and partly on the length of time that it is steeped. From the average of a good many trials, it appears that the medium increase of weight from steeping may be reckoned 0.47; that is to say, every 100 pounds of barley when taken out of the steep-water weighs 147 pounds. The average increase of bulk is about 4.5th; that is to say, 100 bushels of grain, after being steeped, swell to the bulk of 120 bushels. The carbonic acid emitted while the barley is in the steep is inconspicuous; and it is probable, from the experiments of Sauré, that it owes its formation, at least in part, to the oxygen yielded in solution by the steep-water.

The steep-water gradually acquires a yellow colour, and the peculiar smell and taste of water in which straw has been steeped. The quantity of matter which it holds in solution varies from 1/3 to 1/4th of the weight of barley. It consists chiefly of an extractive matter of a yellow colour and disagreeable bitter taste, which deliquesces in a moist atmosphere, and always contains a portion of nitrate of soda. It holds in solution most of the carbonic acid dissolved. This extractive matter is obviously derived from the husk of the barley, and is that substance to which the barley owes its colour. Accordingly grain becomes much paler by steeping.

After the grain has remained a sufficient time in the steep, the water is drained off, and the barley thrown out of the cistern upon the malt-floor, where it is formed into a heap called the couch, about 16 inches deep. In this situation it is allowed to remain about 24 hours. It is then turned by means of wooden shovels, and diminished a little in depth. This turning is repeated twice a day or oftener, and the grain is spread thinner and thinner, till at last its depth does not exceed a few inches.

When placed in a couch, it begins gradually to absorb oxygen from the atmosphere, and to convert it into carbonic acid, at first very slowly, but afterwards more rapidly. The temperature, at first the same with that of the external air, begins slowly to increase; and in about 96 hours the grain is at an average about 10° hotter than the surrounding atmosphere. At this time the grain, which had become dry on the surface, becomes again so moist that it will wet the hand, and exhaltes at the same time an agreeable odour, not unlike that of apples. The appearance of this moisture is called sweating. A small portion of alcohol appears to volatilize at this period. The great object of the maltman is to keep the temperature from becoming excessive, which is effected by frequent turning. The temperature which it is wished to preserve varies from 65° to 62°, according to the different modes of malting pursued.

At the time of the sweating, the roots of the grains begin to appear, at first like a small white prominence at
the bottom of each seed, which soon divides itself into three rootlets, and increases in length with very great rapidity, unless checked by turning the malt. About a day after the sprouting of the roots, the rudiments of the future stem, called acrospire by the maltsters, may be seen to lengthen. It rises from the same extremity of the seed with the root, and advancing within the husk, at last issues from the opposite end; but the process of malting is stopped before it has made such progress.

As the acrospire shoots along the grain, the appearance of the kernel, or at least part of the corn, undergoes a considerable change. The glutinous and mucilaginous matter is taken up and removed, the colour becomes white, and the texture so loose that it crumbles to powder between the fingers. The object of much of the heat of malting is to produce this change, which is accomplished, which takes place when the acrospire has come near to the end of the seed, the process is stopped by drying the malt upon the kiln. The temperature at first does not exceed 90°; but it is raised very slowly up to 140° or higher, according to circumstances. The malt is then cleared, to separate the rootlets, which are considered injurious.

Barley, being converted into malt, generally increases two or three per cent. in bulk, and losses, at an average, about 20 per cent, in weight, of which are ascribed to kiln-drying, and consist of water, which the barley would have lost had it been exposed to the same temperature; so that the real loss does not exceed 8 per cent. From many trials, made in many different places, it appears, as observed by Dr. Thomson, that the following is the usual way of accounting for this loss:

- Carried off by the steep-water: 1.5
- Dissipated on the floor: 3
- Roots, separated by clearing: 3
- Waste: 2

The loss on the floor ought, in Dr. Thomson's opinion, to be entirely owing to the separation of carbon by the oxygen of the air; but what has been observed would be much smaller than three per cent., according to the same authority. Two other causes concur to produce this loss:—1. Many of the roots are broken off during the turning of the malt; these wither and are lost, while others grow in their place. 2. A certain portion of the seeds lose the power of germinating, by bruises and other accidents, and these lose a much greater portion than three per cent. of their real weight. After numerous careful trials, Dr. Thomson is disposed to conclude that the quantity of carbon separated during the whole process of malting, by the formation of carbonic acid gas, does not exceed two per cent., and that the weight of the roots formed amounts often to four per cent. These two, in reality, include the whole loss of weight which barley sustains when malted. What is lost in the steep, being husk, need scarcely be reckoned.

In the opinion of Dr. Thomson, the roots appear, from the process, to be formed chiefly from the mucilaginous and glutinous parts of the kernel. The starch is not employed in their formation, but undergoes a change, intended, no doubt, to fit it for the future nourishment of the plume. It acquires a sweeter taste, and the property of forming a transparent solution with hot water. In short, it approaches somewhat to the nature of sugar, and is probably the same with the starch which is presented when starch is converted by boiling with diluted sulphuric acid.

The following are the results of Dr. Thomson's analysis of barley and the malt made from it:

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<th>Year</th>
<th>England</th>
<th>Scotland</th>
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<td>1703</td>
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The analysis of malt above stated is that of pale malt, whilst in the brown and roasted malts the sugar appears to be entirely converted into gum and colouring and antiseptic matters; and hence they are incapable of undergoing fermentation. The brown malt is subjected to a higher temperature in drying than the pale malt, and by a still further exposure to heat in revolving cylinders or roasters it is converted into black or patent malt.

Statistics. Malting was first made to contribute to the public revenue in England in 1697. In Scotland the duty commenced in 1713, and in Ireland in 1765. The rate of duty, calculated on the imperial quarter, was in England 6d. per bushel from 1697 to 1760; from the latter year to 1798 it was 9d. per bushel; from 1798 to 1817 the duty was 1s. 4d.; it was then for a short time raised to 1s. 7d., but was lowered to 1s. 2d. again in 1799, and continued till 1802, when it was raised to 2s. 6d., and in the following year was further raised to 3s. 2d., and continued till 1816, when it was raised to 3s. 7d. and in the following year was raised to 3s. 9d. In 1822 it was raised to 3s. 11d. and in 1824 to 3s. 13d.

There has been no alteration since 1824.

In Ireland the duty first charged in 1765 was 3d. per bushel; in 1794 the rate was advanced to 9d. and in the following year to 1s. 3d.; in 1798 to 1s. 6d., and in 1819 to 1s. 8d. Further additions were made in 1823 to 2s. 0d., in 1827 to 2s. 6d., in 1829 to 2s. 9d., and in 1835 to 3s. 2d. A reduction took place in 1837; 2s. 4d.; in 1843 the duty was again raised to 3s. 6d. and was again raised in 1822 to 2s. 7d. The only abolition since made was in 1830, when the duty on malt from barley was reduced to 2s. per bushel.

The quantity of malt charged with duty in various years in the different divisions of the kingdom, and the amount of revenue received thereon, has been as follows:

- 1703 | 7,500 | 7,500 | 7,500
- 1704 | 7,500 | 7,500 | 7,500
- 1705 | 7,500 | 7,500 | 7,500
- 1706 | 7,500 | 7,500 | 7,500
- 1707 | 7,500 | 7,500 | 7,500
- 1708 | 7,500 | 7,500 | 7,500
- 1709 | 7,500 | 7,500 | 7,500
- 1710 | 7,500 | 7,500 | 7,500
- 1711 | 7,500 | 7,500 | 7,500
- 1712 | 7,500 | 7,500 | 7,500

It cannot fail to be observed, from these figures, that the increased consumption of malt in this country has been in a very inadequate proportion to the increase of the population. In the year 1730 the population of England was

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Wales was 5,687,993, and it will be seen that the number of bushels of malt made for their use was about 25 per cent. of the total amount. In 1831 the numbers were 13,894,574, and the consumption of malt 32,936,470, being less than 24 bushels for each. The reason for this comparative falling off is to be sought in our fiscal regulations. The rate of duty on malt in 1730, only six-fifths of the rate paid in 1831, and the consumption of course tend to check the consumption; but coincidently with this cause the importation of foreign-made malt has been prohibited; and as all the land in England fitted for the production of fine barley, such as is suited for the maltster, has been by that means saved, and the price enhanced so as to come in aggravation of the high duty. The importation of barley from foreign countries is allowed under very high duties, fluctuating with the price of flour; but under these circumstances any addition be thought due to the quality of malt in this country, because barley which has undergone a voyage of any length is unsuited to the process of maling.

MALTA. - General Description.—The Maltese islands, in the Mediterranean, lie between 35° 49' and 36° N. lat., and 14° 10' and 14° 36' E. long. from Greenwich. Malta is 56 miles from the nearest point of Sicily, and 179 from Cape Denia, the nearest point of the mainland of Africa. Its greatest length, including appropriate ground and sea, is 18 miles, and its circuit, as a boat would sail round it, 44 miles. It contains two principal ports on the south-east side of the island, which are separated by a tongue of land a mile and a half long, on which are built the castle of St. Elmo and a light-house. These towns command the space of land (formerly called Mount Scaccebarras) is 200 feet above the level of the sea, but lowers towards the point, and is almost flat at the part where it joins the mainland. On this advantageous position is built the modern city of Valletta, which is the seat of government, and the capital of the island. It is defended on all sides by the most stupendous fortifications, which no power commanding less abundant resources than the Knights of St. John of Jerusalem, who drew large revenues and sometimes contributions from the richest countries, could have constructed. Other works situate on the opposite side of the great harbour are of nearly equal strength; amongst which is the powerful castle of St. Angelo, that rakes the entrance of the harbour, with four tiers of guns, the heaviest of which is d' fleur d'eau, corresponding to these, and completely forbidding every approach. Altogether the place is considered impregnable, which was proved by the fruitless endeavours of the British to expel the French garrison in 1798-1800.

When the British troops took possession of the place, after the capitulation of 1800, there were upwards of 600 pieces of ordnance mounted on the fortifications. The land-front of Valletta is defended by a strong line of works, which stretch across from one port to the other, having within them two very high cavaliers, which command the town and country, and look into the works on the opposite sides of each harbour. This front is strengthened by a dry ditch running its whole length, excavated in the rock to a depth varying from 90 to 140 feet. Outside the works of Valletta there is a suburb called Floriana, and beyond this another series of fortifications, consisting of an interior and exterior line and a horn and crown-work in front of them. The total number of embrasures in the defences of Valletta and its ports, including the three cities, is 947; but as the cavalry and some of the parapets are en barbette, it may be calculated that the number of guns required to mount these works completely would be 1150. Many however are kept in store, and the embrasures at some points are considered useless.

The main harbour, which is to the eastward of Valletta, is about 4,000 yards in length, with an entrance 450 yards wide, defended by a strong fort opposite the castle of St. Elmo, called Ricasoli, which crosses its fire, but is commanded by that castle. The harbour varies in width, from 200 to 300 yards, and is studded with more than 300 rocks, which are of themselves ports and capable of containing many ships of war. In one of these is situate the naval arsenal, consisting of a rope-work, the offices of the naval departments and extensive stoneworked houses, which would contain all that is necessary for the fitting out of a very large fleet. On the opposite side of the same cove are handsome residences for the succenturian and officers of the arsenal, and spacious stores for the victualling department. Here also are three immense arches of masonry, under which the galleys of the Order were built, and drawn up for repair and for protection from the weather. All the buildings constructed by the Order, and they have been greatly improved by the British government, the commanding point opposite Valletta, called Bighi, stands the new naval hospital, which was built by a vote of parliament in 1830, and is one of the many striking objects which surround this beautiful harbour. The entrance of the port has no bar or other obstruction, and the vessels of the greatest size can sail in, close under the basstels of Valletta, direct to their anchorage. In the great harbour and its coves five and twenty sail of the line have been known to lie along the harbour at the same time, with three or four hundred merchantmen. The only wind which renders it dangerous for boats to sail, or creates any uneasiness for the shipping, is the north-east (commonly called galez), and that only when it blows hard; but there is good holding ground, and accidents do happen.

The harbour to the westward, which is called Marsamuscetto (a word signifying, in Arabic, 'a place of shelter'), has at its entrance, opposite to and besides the castle of St. Elmo, a small but powerful fort called Fort Tigne. It is principally for the protection of the merchantmen, for it is adjacent to the islands most infested with the plague, and it is therefore commonly called the Quarantine harbour. Here is also the lazaretto, a suite of extensive buildings, built on an island in the centre of the harbour, with which have lately been moved the sick and the convalescent of the ships lying at Manoel, on the same island; the whole forming the most complete quarantine establishment in the Mediterranean. In addition to its former accommodations a new plague hospital is now nearly finished. Since the plague of 1813-14 the case of plague has occurred in the island, though many infected ships and crews have been received in this lazaretto.

Besides the harbours already mentioned there are several bays which ships sometimes enter in stress of weather, such as Marsamuscott, St. Thomas's, Scala, in the south-eastward of Valletta, and St. Julian's, St. Paul's, and Mellieha, to the north-westward, on the shores of which, as well as on all parts of the island where a landing could be effected, small towers are erected, which under former governments served to give alarm in case of the appearance of an enemy, but are now only used to prevent smuggling and maintain the quarantine laws.

The whole of the southern coast of the island is by nature inaccessible. The rocks rise perpendicularly from the sea to the height of 300 feet. The island slopes from the southern to the northern side.

The small islands of Gozo, Comino, and Filfla belong to the group of the Maltese islands. The island of Gozo is about three miles and a half north-west of Malta. It is an oval island, 10 miles long by 1 mile and a half wide; it has no town or port on its coasts, and is only approachable by small craft. Its coasts are perpendicular on all sides, and it is studded with a few points of high land in the form of cones, one of which, being about 270 feet high, serves as a landmark to vessels coming from the westward. Between Malta and Gozo stands the little uninhabited island of Comino, in the channel between the two islands, which has a depth of water sufficient for the largest ships. This island is about 3 miles long by 1 mile and a half wide; another small island called Fiflma, one mile and three-quarters south of Malta, is about a mile long and half a mile wide; it is a high perpendicular rock, also without inhabitants.

The general appearance of Malta and Gozo is that of flat lands, the highest part of which is less than 600 feet above the level of the sea, and not visible at a greater distance than 24 miles. From being entirely calcareous rock, without any trees of large size, and a part of the year without any verdure whatever, the aspect of these islands is dreary and barren.

Particular Description.—The scene on entering the port of Malta is one of the most striking and beautiful that can be conceived. This magnificent harbour is surrounded with bastions, over which appear handsome buildings and the towers of numerous churches, all built of stone, and
presenting the cleanest and most brilliant appearance. On one side stands the city of Valletta majestically towering above the hou
carob grows in abundance: some of the carob-trees are a hundred years old, and annually produce a plentiful crop. In these months, Maltese men and women in the island and abroad, derive benefit from the scarcity of pasture, very few cattle are bred. Meat is principally imported from Barbary. Horses are also imported, but some mules are reared, and the asses of Malta and Gozo have always been celebrated for their strength and beauty; they fetch large sums for exportation. Goats are likewise bred, which are prized for the quality of milk they give. An animal once peculiar to Malta is the small dog with a long silky coat, mentioned by Pliny, which Buffon calls 'bichon'; but this race of dogs is now extinct. A peculiar part of Malta is the superior quality of its fish, and the market is supplied with the common kinds. The dory, rock-cod, white and red mullet, and a species of whiting, commonly called codling, are extremely copious and excellent. The cray-fish, found on the rocks of the island of Gozo, are of enormous size and fine flavour.

Roads and Appearance of the Country.—The roads in Malta and Gozo, generally speaking, are good, and communicate with the several parts of the island. The wheels and shafts are made to carry four persons, but always drawn by one horse, by the side of which the driver runs. The glare of the hot naked roads, without hedges and without trees, is injurious to the eyes under a bright sun; but if it be broken up by trees or by a cold wind, or by the evening shades, the eye rests upon the innumerable stone dwarf walls, which are built up with the utmost care to prevent the precious earth from being washed away by the rains; and these are only relieved here and there by the fine branches of the carob-tree, which is always green, and occasionally by the cactus, or Indian fig, which grows in considerable abundance.

Climate.—Although these islands cannot boast of rich landscapes, they are blessed with the steadiest climate in Europe. If the leaves of trees be wanting, the inhabitants are free from the damp and stagnant air which infects woody countries; and the bareness of the rock is compensated by the absence of vegetable putrefaction. During the shortness of the day the sun heats the summit to a temperature that is more than sufficient to dry and to sweat the dirtiest clothing, and to evaporate the perspiration on the most exposed head. Malta and Gozo are among the hottest and driest countries in Europe; but the heat never remains oppressive for more than a few days together. Although the climate of Malta is considered as one of the most perfect, yet it is very common to enjoy clear weather and a cloudless sky. Frost and snow are unknown. Throughout the spring, northerly and westerly winds refresh the atmosphere; and it is not until the month of July that the inconvenience of the heat is felt. Malta is a station of the residence for the return of English invalids during the winter, i.e. from the beginning of October to the end of May. Englishmen may here find English society, reading-rooms, newspapers, &c., and English medical advice. The houses are excellent; living is good and cheap; and the communication with England is speedy and regular. Malta has always been free from earthquakes. It may be remarked that hydrophobia is unknown in Malta; and that horses are never subject to the galleys, or any insect of that kind. It is far from being true, however, that inhabitants of Malta have never seen mothers at fifteen. The women are very prolific, and where there are so few resources for the employment of families, there must be much poverty and wretchedness.

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but the people are industrious, temperate, and frugal, and, being favoured by the climate, their wants are few. The great bulk of the people, who are not employed in field-labour, are stone-cutters. The Maltese are also excellent seamen, and are esteemed such in all the ports of the Mediterraneum. In Valletta and Malta there are two large museums, the buildings of which are fitted up and furnished with the English style, all articles of household furniture are made in a superior manner, and much furniture is exported to the Levant. Workmen and artisans of all descriptions are numerous and expert in their respective trades. Their earnings in trade and other instrumentalities are capable of great excellence in art. The elegance and beauty of their filigree work in gold and silver are well known. The higher orders enter into all the amusements common to persons of a similar rank in other parts of Europe; but generally speaking, religious life and intellectual pursuits are not amongst them. They are fond of mixing in English society, and follow its usages: their manners, if not easy, are singularly exempt from vulgarity, and they have a great aptitude in catching those customs which are considered as the respect of the rules, even to the anomalies of the Arab business, and the women good housewives. The grandmasters, as sovereign princes, granted to many Maltese the titles of marquis, count, or baron, in order to secure in their interests the antient families of the island, and also as a means of making them important in society. In a similar manner has been raised to nobility by the previous sovereigns. By the law of primogeniture their descendants still form a class of nobility, the property of a few individuals of which amounts to more than 1000, a year, but the poorest of the nobles is not a year considerable what is called a rich man. The younger branches sometimes study for one of the liberal professions, the candidates for which are numerous in Malta. All classes are much attached to the British government, and it would be difficult for any other power to introduce them from their allegiance.

Language. —The Italian language was introduced into these islands during the existence of the Sicilian government, and has ever since been in use, chiefly among the upper, but partly also among the middle classes of the inhabitants of these towns, in addition to their native tongue. The Italian has been also generally used in conducting the affairs of government, in legal proceedings generally, ecclesiastical matters, the transaction of commercial business, and for the purposes of education and literature. But up to the latter part of the last century, the mother-tongue of the people, the Maltese, has continued in use throughout the country and at Gozo, and also among the poorer classes in the towns. It continues to be chiefly used by the upper classes in familiar conversation.

There has been much discussion on the language spoken by the Maltese, and as it is an unwritten language, the subject is one of some difficulty. But Mr. Schlienz, an oriental scholar, and a person who, by a residence of many years among the people, has had full opportunity of seeing the arguments of those who attempt to trace it to the Phoenicians, the Carthaginians, and other antient nations, and comes to the conclusion 'that all its words, with the exception of very few, are purely Arabic, and conform in every respect to the language of the inhabitants of certain districts in Malta, to the great advantage of the Maltese people. The Arabic language was introduced into Malta by the Saracens, who had long had almost exclusive occupation of the island, when it was reduced by Count Roger the Norman.

The English language has made considerable progress in Malta; but it is still a foreign language to most of the natives. Many educated persons speak and write it, and still more read it, with facility. Among the inferior classes in the city of Valletta, the speaking of English, for the purposes of trade, is very common.

Education. —The education of the Maltese has been until lately very limited, although a university, established in the time of the grand-master Pinto, offered to the natives the means of a learned and scientific education, and several erudite works have been written by Maltese authors. Since the Report of the Commissioners of Inquiry in 1838, the means of education have been more widely diffused; the government having, with a view to raise the population from their state of gross ignorance, undertaken the establishment of primary schools throughout the rural districts. Of these there are already twelve open (including Gozo), at which upwards of 1500 children are instructed; both sexes receive instruction in the towns of Malta and Valletta. As the three primary schools, in which 600 children are educated, these schools are conducted upon the Lancastrian plan somewhat modified. The university has been also reorganized upon a more liberal scale, and has about 400 students. The Lyceum or high-school, attached to the university, is increasing in the number of scholars, which amount to 120. Education is therefore advancing in these islands, and will no doubt continue to do so, in proportion as the people become more aware of the advantages which they are likely to derive from it.

Religion. —The religion of the people is the Roman Catholic, to which they are universally and strongly attached, and they are punctually scrupulous in the observances of its rite. Their religion was secured to them at the surrender of the island to the French republic, and again by the provisions of the English generals who took possession of Malta, when the French were driven out of it. This preface has been scrupulously performed, and although the government has been favourably disposed of the people, no religious observance has been known to disturb the peace. The church festivals, which are very numerous, were always celebrated by public processions, which afforded an opportunity to the people of all classes to make holidays; and the church has been known to hold in reverence and respect the privileges of former days kept in strict seclusion, except with permission to church, on these occasions found recreation in the public promenades, for which such festivals served as a pretext. The observance of religion were therefore connected with public life, and the connection between the two is a striking and almost solitary instance of a highly religious people, ruled by a government of a different creed, by whose tolerance all live in the greatest harmony.

The Roman Catholic clergy are very numerous, amounting, between regulars and seculars, to about 900, of whom some are eminent for learning. The landed property of the church is about one-fourth of the rental of the island, out of which the bishop enjoys an income limited to 3000L a year.

Most of the pestilential places of worship are few and unimportant. The governor has his chapel in the palace of government; the naval departments have theirs in a building near the naval arsenal; there is a Sunday afternoon service in the house of the Church Missionary Society; and the Wesleyan has a large church in the town. There are many private places, where a friendly society or a religious service is performed by the military chaplains on their respective barracks. They have long desired to see a church erected for their use; this wish has been realized, her majesty the queen-dowager having generously signified her intention, on her late visit to Malta, to erect a church at her sole expense for the public worship of the church of England. The site for this building in the city of Valletta has been granted by the government, charged with the payment of annual sums, in divers forms for the encouragement of marriages among the poorer people.

In 1530, when the Order took possession of the islands, the population amounted to 15,000. In 1632, according to Bishop Scott, to 15,000. In 1797, according to Maunier, to 60,000. In 1798, according to Boisselin, to 115,000. In 1803, according to Colquhoun, 'Wealth of the British Empire' to 140,000. In 1813, the effects of the pestilence, and the plague has increased the population to 90,000. In 1828, according to a census taken in that year, to 118,194. In 1838, according to the last census, to 138,500.
Similar to the municipal councils of Sicily, which originated in the reign of Frederick II. of the house of Hohenstaufen. This municipal council appears from its archives, which are still preserved at Malta, to have exercised considerable administrative, and even legislative powers, though its formation and constitution are quite obscure.

In the Maltese islands, passed to the emperor Charles V., as heir to the crown of Aragon. On the 4th March, 1530, Charles granted to the grand-master and religious fraternity of St. John, who had recently been expelled by Rhodes by the Turks, the ownership of all the castles, fortresses, forts, and other places in the island, and gave to them complete jurisdiction. The sovereignty of Malta was by this grant in effect surrendered to the Knights, though the form of tenure from the crown of Sicily was maintained by the reservation of the annual payment of a fief by the Knights to the sovereign of the island, who was to remain to this day as a monument of their perseverance and military power. On the 18th May, 1565, the Turks, under Mustapha Pacha, to the number of 30,000 choice troops, landed on the island of Malta, where they maintained a separate resistance from the Knights. Finally, the Turks were compelled to quit the island, with the loss, it is said, of 25,000 men: the loss on the other side was computed at about 7000. Upon the death of Sultan Solyman in 1566, shortly after the defeat of his troops, the grand-master La Valette, who had successfully defended Malta against this formidable invasion, determined on the founding of a new city, in a favourable position for the protection of the island, and as a residence of the convent of the Order. He laid the first stone of the city of La Valette, where the capital of the island, or its continuation, was founded, on the 28th of March, 1566. The Knights, now secure in their possession of Malta, continued to cruise against the Ottomans, whom they greatly annoyed. But the discipline of the Order relaxed as the objects of their original institution gradually became uncertain; and Malta, which was safe against all attack, was a place of luxury and pleasure rather than of austerity.

The history of the island, between this time and its surrender to Bonaparte, requires no particular notice in this brief sketch. The conclusion of the Treaty of Amiens was an event calculated to shake the declining power of an institution like that of the Knights of Malta, and the behaviour of the Order towards the new republic of France, their supposed partisans, their vessels, and their agent in Malta, greatly contributed to the depression of its influence; and Malta, which was safe against all attack, was a place of luxury and pleasure rather than of austerity.

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on board the ship of the line Orient, lost no time in making a demand in writing that the whole fleet should be allowed to enter the ports of Malta to water, to which an answer was returned, with expressions of regret, that only two, or at most, four ships, could be allowed to enter the port at a time. The Grand master refused to allow, on the other part; 'to-morrow at sunrise the army will disembark upon the coasts of the island wherever a landing can be effected;' and these words were inserted in the order of the day.

Generally, the next morning a body of French troops disembarked in St. George's Bay to the north-westward of Valletta, where one gun was fired from the tower for form's sake, and the batteries of St. Elmo and Fort Tigné opened a fire, which was ineffectual from their position. Another corps reached the Bay under cover, and to the west of the harbour of Marsascocco, to the south-east. Before night the French were in possession of the whole country, with the exception of five villages, or casals, without any opposition on the part of the knights who commanded several posts; and the unsuccessful attempt of the Maltese battalions of Nasciar, Muta, Gargur, and Birchirana to defend their homes, only afforded to troops like the French a pretext for bloodshed and plunder. In the meantime the city of Valetta, the state of Rome Catlin and despoil. The Grand master, in a state of the greatest perplexity, was surrounded by various advisers, but wanted firmness to decide. At length, when it was reported to him that some French knights had been killed, and others wounded, by the Maltese, he felt his cause, and determined to solicit a suspension of arms. Two messengers were immediately sent on board the Orient to announce the readiness of the Grand-master to come to terms; they were bearers of a letter from the Danish consul to the French general, in which he represented his favour and another for the Grand-master himself to the commander Dolomieu, a knight of the Order, who had openly attached himself to the French, and was on board the Orient, soliciting his good offices. In the afternoon General Junot and others brought an answer to the letter of the Grand-master, and after twenty-four hours' negotiation to send his delegates to conclude the capitulation.

Distrusting their government, the inhabitants claimed to take part in the deliberations; and to two knights and four influential citizens were confined the conditions upon which the fortress was to be surrendered. On the 12th of July the capitulation was signed on board the Orient by Bonaparte himself and these delegates. By its stipulations the Order of St. John of Jerusalem renounced, in favour of the French republic, the sovereignty of Malta, Gozo, and Cu- mania, and by renouncing this power, the French were allowed to influence with the congress of Rastad to procure for the Grand-master during his life a principality equivalent, and in the meanwhile he was to be allowed a pension of 300,000 francs; he was to remain within the limits of his country; to the French knights then in Malta; pensions of 700 francs were to be paid, and 1000 francs to those of sixty years and upwards; it engaged to intercede with the Cisalpine, Ligurian, Roman, and Helvetic republics, to obtain similar pensions for the knights of those countries, and also with the other European powers, to secure to the knights of each the property of the Order. The knights were moreover permitted to retain their private property in Malta and Gozo; and the inhabitants were to continue in the enjoyment of their rights, so long as they lived, and to secure in their property and privileges, and any extraordinary contribution was to be imposed upon them. This capitulation was more favourable than could have been expected. Hompeach was not asked to ratify its conditions.

On the 13th of June, the same day the arrangements of war and transports anchored in the ports of Valletta and Marsascocco, and 15,000 troops took possession of Valletta, the three cities on the other side of the harbour, and their outworks. The French general had no sooner entered the city than he ordered the repair of some batteries, and the fortifications of Valetta.

The French found in the port two line-of-battle ships, one frigate, and three galleys, besides two galiots, and some guard boats; and of ordnance 1500 pieces of artillery (about 800 of which were mounted on the works), together with...
With more than 6000 well-disciplined troops under his command (the soldier and the crews of the vessels which escaped from Altorf having been incorporated with them) he was unable to make a sortie in sufficient force to overawe his enemies; for the people of Valletta, encouraged by the movement of their countrymen, and borne down by a sense of loss and the privations inseparable from a state of siege, were not to be left quietly within the walls. The Maltese now made a warm appeal to the king of Sicily as their sovereign. They sought assistance from the British fleet, and sent out boats in all directions, some of which fell in with the fleet that communicated with Lord Nelson on his return from the battle of Aboukir; he sent the Portuguese squadron to their aid, his own ships being much disabled, and promised soon to follow. In fact on the 18th of September four Portuguese ships of the line and five frigates came in to obtain the permission of General Vaubois to escape from the horrors of the siege, and to slaughter the inmates of this city. The Maltese now began a demand for the extension of the blockade, and supplied the Maltese with some arms and artillery. On the 25th of September Lord Nelson himself appeared with fourteen ships of war, and summoned the French to surrender, offering to send them all to France, and not consider them as prisoners of war; to which General Vaubois returned a laconic refusal. The English admiral's force not being in a state to keep the sea, he was obliged to go to reft, and he left the Portuguese admiral to maintain the blockade. So noble and encouraging was his refusal that the inhabitants were agreed that he should continue his presence among them with powder and shot, now permitted them to receive corn from his granaries upon credit. Yet their great support was the reliance they had on the presence of the British navy. Captain Alexander John Ball, who commanded the squadron sent to Augr, was, and ever more and more, received with joy and esteem; his sympathy and consideration for the Maltese was a sentiment of the heart, not a cold act of duty.

In the beginning of 1799 the Maltese elected him their chief and the president of their congress, which was immediately organised, and consisted of the bishop's delegate in ecclesiastical matters, a judge, and twenty-two representatives elected by the calas. The affairs, civil and military, of the Maltese now began to take the form of a regular administration under the direction of Captain Ball. A general order was given to all the persons of the navy and army to use the best means for supplying the island for a whole year, to be opened, and the landed property of the church and of the late Order to be let for the purpose of paying the expenses of the war. The customs were also regulated, and the bays of St. Paul and Malta were made the ports of disembarkation. In April Captain Ball sailed to the court of Naples, an order from the king of the Two Sicilies to assume the command of Malta for his majesty, and the Neapolitan flag was now raised upon the Maltese batteries in conjunction with the English navy. A sum of money about 3600£ was about this time received for the first time, and was afterwards followed by others, which although supplied in the name of the king of Naples, were really furnished from the English subsidies. Very soon after this Lord Nelson exchanged letters with the French, and it was agreed that Malta would be protected by England, Russia, and Prussia until a general peace. All matters therefore seemed to be well regulated as circumstances would admit, and the most ardent hopes were entertained that an end would soon be made to the miseries of this city. The French were defeated by the surrender of the French garrison, which was now strictly watched by land as well as by sea. But they had still much to contend against, and among other calamities disease, brought on by long suffering, and famine carried off many of the poorest classes, for whose relief no charitable fund existed; and it is stated that during the two years not less than 20,000 persons died of misery and famine. The expelled knights of the Order were not indifferent to the cause going on in Malta; the bailiff de Neve and some others attempted to land, offering their services to assist in recovering the island from the French, but they were rejected with indignity.

At the commencement of the siege the quantity of corn in the granaries of Valletta and the three cities was 38,000 quarters, which it was calculated would suffice the inhabitants and the garrison about 16 or 17 months. The city was so closely blockaded by sea, there seldom being less than three or four ships of the line, and as many smaller vessels cruising off the port, that only 15 small vessels with supplies besides the fleet Block, entered in the first twelve months; and the situation of the besieged, before scarcely four months had elapsed, was such, that Ransijat, treasurer of the Order, who had given us a very detailed journal of the occurrences within the city, says that from the beginning of the blockade to the present time, the Maltese have not seen a single person or animal of any sort.

The Maltese at first raised but few batteries, and those inconceivable ones. When however they were joined by the English and Portuguese, who furnished them with mortars and cannon and a great quantity of ammunition, affairs grew more prosperous; they made great efforts and consultations, and raised fruits and vegetables to ameliorate their situation. At this time a pound of fresh pork sold for 6s., salt meat 2s. 10d., the commonest fish 2s. 2d., a fowl 50a., a pigeon 10a., a pound of sugar 18s. 4d., coffee 21s. 6d., a good rat 1s.

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been evacuated by the British troops in three months after its rati-
citation. But before the lapse of that period, cir-
cumstances had arisen which not only retarded the resto-
ration of the island to the Knights of St. John, but rendered that
measure inconsistent with the interests of Great Brit-
tain. The increasing effort of her Indiamen, the im-
buey of Amiens remained unexecuted, and Malta remained in
the hands of the English. On the 18th of the same
month George III. issued a declaration of the motives which
obliged him again to take up arms.
In eighteen months from the time which followed, Malta was retained
in military possession by Great Britain, without any formal
declaration as to who was to be its future master. It be-
came the head-quarters of the English army in the Medi-
terranean, and the rendezvous of the British fleet, which
found a convenient situation from the advantage of the con-
venience the ports of the island afforded for fitting out and keeping in an effective state the squadrons which
held the dominion of the seas from Gibraltar to the Dar-
danelli. It became the arsenal for all the fleet, and was
used as the base for all the military operations of the
period. The declaration of war by the Emperor of Austria
was received in Malta with indifference, and the natural
dead of six; the grass grew in the streets, and everybody
was shut up as in a prison.
On the 30th of May, 1814, a definitive treaty of peace,
concluded at Paris between France and the allied powers,
fixed the limits of the lost of Malta, by a formal recogni-
tion of her union with Great Britain, with the concurrence of the
king of Sicily, whose predecessors had for three cen-
turies only exercised suzerainty over the island. Thus
the Maltese people at length obtained the fulfilment of their
aspirations. They were enabled to make the choice of their
own sovereign. It is only under a great maritime power that
they can be secure from aggression.
But the island did not recover its late excess of prosperity.
The peace, which carried blessings to all the nations of
Europe, opened the ports of the Continent to English com-
merce, which naturally neglected Malta and went thither
direct. Malta besides was obliged to suffer a sort of pen-
ance inflicted upon her by the ports of France and Italy,
whose health establishments kept her in quarantine for 12
years after the peace of Paris. It was not until the
June, 1826, that she was admitted to communicate freely with these
commercial states; and by this time her prin-
cipal commercial establishments were broken up. The ex-
emption enjoyed by the island as a free port and a station
for British ships of war, and the trade with Barbary and the Levant, were her only resources, and formed no approach to the florid state of prosperity she enjoyed soon after her first connection with Great Britain.
In the mean time her already excessive population was
increased by the influx of people from the island of Gozo,
in 1832 the people began to petition his late majesty, Wil-
liam IV., for a consideration of their depressed condition, alleging certain grievances, which were then but cursorily
considered or ineffectually remedied. In June, 1836, they
rose in arms against the government of the British
through the House of Commons, by a petition signed by
2388 Maltese, which was presented in that house by Mr. Bwrt, on the 7th of June, 1836. The Maltese in this appeal
prayed for a municipal body, a reform of the law, a mode-
ration of the rents, a reformation of the army, and an improve-
ment of education and elementary instruction, an independent
board of health, a free port, a relief from the heavy excise
duty on wine, a participation in the emoluments of office,
a relief from the heavy duty on grain, and a popular council for
the representation of the people. And the passions of the
people were so great that the civil and military authorities
wants and grievances. Commissioners of Inquiry were
sent out in September, 1836, to examine and report upon the
grievances set forth, and from their labours the most
useful reforms are anticipated. Some indeed are already
in being, and the most important of the complaints
of Malta for all foreign merchandise, the duties remaining
only on articles of consumption: the reform of the govern-
ment departments, and the distribution of the higher offices
more fairly among the Maltese, which were formerly held
almost exclusively by Englishmen through patronage: a
reconstruction of the university, and the introduction of ele-
mentary education amongst the lower orders; and though
last, not least, the full liberty of printing and publishing,
under laws to be enacted, by which the people are guar-
anted their complaints to the British government and the British
people.
What promises however to be of the greatest benefit to
Malta is the development of steam navigation in the Medi-
terranean, within these few years past, not only
the large vessels from the coasts of France and Italy to the
Levant, which all meet at Malta as the most advanta-
geous point of rendezvous, and to provide themselves with
coals, but from the increasing importance of the commu-
nications between England and Asia through the Mediterr-
anean. Travellers of all nations are to be seen in the streets
of Valletta, and there, where a few years ago every face was
familiar, now one walks amongst strangers in continental
cities. This influence of persons has led to the establish-
ment of hotels, the great houses of St. John, the hospicium,
declined and in the lazaret have stamped Malta as the most impor-
tant quarantine station in the Mediterranean, and that which
is now most resorted to by travellers of all countries.
MALTA, KNIGHTS OF, a celebrated military and
religious order, known by the name of St. John of Jerusalem,
Malta; also a crusading order, the Hospitallers of St.
John of Jerusalem, Knights, Hospitaliers, and Knights
of Rhodes. The institution of the Order originated in an hospi-
tice which was founded at Jerusalem, by permission of the
caliphs of Egypt, about the middle of the eleventh century,
for the reception of the sick and wounded, who were
allowed entrance on a payment of a trifling sum, which was
considered sufficient to cover the cost. The hospice was
annexed to a chapel de-
cated to St. John the Almone, and was at first kept by
Benedictine monks. When Palestine was com-
bined by the Seljuk Turks, in 1065, who drove away the Arab
and Egyptians, the Hospitallers of St. John, who followed
masters much worse than the former, and the hospice of
St. John was plundered. Some time after, a Frenchman
named Gerard, a pilgrim to the holy city, undertook the
management of the hospice, and when Gerard was
found, Gerard, who had been kept in prison by the Moslem
During the siege as a suspected person. Gerard
resumed his duties in the hospice, and several of the crus-
daders, through pious fervour, determined to join, and to
devote the rest of their lives to the service of the poor
pilgrims. Among the knights who took this determina-
tion were Raymond Dupuy and Dudon de Compit, both from
Dauphiné, and Conon de Montaigne, from Auvergne.
Godefroy de Bouillon made a donation of land in
the environs of the hospice of St. John, and several other princes followed his example. The hospice
thus became possessed of lands in almost every part of
Europe, as well as in Palestine. The dress assumed by
these orders was a tunic, a cowl, a helmet with a coat of
eight points or arms on the left breast. Pope Paschal II.
sanctioned the new institution, the members of which
bound themselves by solemn vows of chastity, individual
poverty, and obedience, to which was afterwards added that
of being always ready to fight against the infidels and all
others who forsake the true religion. Vertot, at the end of his 'History,' gives all the laws and regulations of the
Order: 'Anciens et nouveaux Statuts de l'Ordre de St.
Jean de Jerusalem.' The pope exempted them from
all ecclesiastical jurisdiction, and treated them as a
own superior, who was styled grand-master. They
were independent of every other ecclesiastical or lay juris-
A splendid church was raised by Gerard near the
old hospice, and dedicated to John the Baptist, with
example building from the Hospitallers to the Hospitallers
who were there entertained at free cost. Gerard and his
successors established, in various maritime towns of Europe,
hospices in imitation of that of Jerusalem, which served to
resting-places for the pilgrims, who were there provided
with the necessaries of life by the Hospitallers. These
were called commanderies. Such were those of
Tarentum, Seville in Spain, and St. Gilles in Provence.
Gerard dying in 1118, the Hospitallers elected as his
successor brother Raymond Dupuy, who drew up a statute
of the order. He be-

were neither soldiers nor priests. As the Order increased rapidly in numbers, the members were classed into seven nations, called 'languages,' namely, Provence, Auvergne, France, Italy, Aragon, Germany, and England. For nearly two centuries the Hospitaliers, together with the Templars, were the firmest supporters of the Christians in the East, and when Acre, the last bulwark of Christendom, was taken by the Mussulmans in 1291, the remains of the Order withdrew to Cyprus, where the town of Limassol was assigned to the Hospitaliers as their residence.

In the year 1316 the Hospitaliers, having lost all hope of recovering Palestine, equipped a fleet, and, being joined by crusaders from Italy, landed, under their grand-master Foulques de Villaret, on the island of Rhodes, which was then possessed by Greek and Saracen pirates. The Hospitaliers defeated the Saracen pirates, and purchased the formal possession of Rhodes, as well as of Cos and other neighbouring islands. [RHODES]

From that time they became known by the name of Knights of Rhodes. The knights strongly fortified the town of Rhodes, from which they carried on by sea a deadly warfare against the Muslims, who, at first, resolutely carried the whole of the Ottoman Turks, who about that time were establishing their power all over Asia Minor. The history of the Knights of Rhodes, during the fourteenth and fifteenth centuries, is closely connected with that of the Ottomans. Some of the Turkish sultans, as others Amurath or Murad II., were glad to purchase a temporary peace from the knights. Mahomed II., son of Murad, having taken Constantinople, sent a fleet with an army to conquer Rhodes in 1480; but the Turks were repulsed by the knights, under their grand-master Pierre d'Aubusson. In 1552, Sultan Solyman the Great sent another large armament against Rhodes, and he himself repaired thither to direct the siege. Villiers de l'Ile Adam, who was the grand-master of the Order, defended the town with the utmost bravery; but there was a traitor among them, one D'Amiral, a Portuguese knight, who, through jealousy and disappointment at not being made grand-master, kept a correspondence with Solyman, and informed him of the state of the garrison and the weak points of the fortifications. D'Amiral was discovered and executed; but in December of that year the grand-master, having exhausted all his means of resistance, capitulated. Solyman behaved honourably: he allowed the knights, and all the inhabitants who chose to leave Rhodes, twelve days to embark with their movable. Having expressed a wish to see the grand-master, he gave him words of consolation, and, touched by his venerable appearance, said to his viceroy, that 'He could not help being grieved at driving that Christian in his old age out of his house.' On the 1st of January, 1553, the grand-master and the surviving knights left Rhodes and took refuge in Italy.

In 1530 Charles V., gave to the Order the islands of Malta and Gozo. [MALTA]

After the surrender of Malta to the French, in 1798, the Order as a sovereign body became extinct, and its domains in various parts of Europe were confiscated. It still however exists as a religious order, a phantom of its former greatness. Ferrara in the Papal State is at present the residence of the grand-master and a few knights of the order of St. John of Jerusalem, who are only supported by some scattered remains of their ancient splendid revenues. Circumstances have so much altered in Europe, the Levant, and Africa, that the Knights of Malta as a sovereign military order would no longer be in harmony with the actual state of civilization. The order and institution have long ceased to exist. They were however for some centuries, together with Venice, the firmest bulwarks of Italy and western Europe against the barbarian power of the Ottomans.

(Malva, Histoire des Chevaliers Hospitaliers de St. Jean de Jerusalem.)

MALATHA, a bituminous mineral, of which such different accounts are given by various authors, that it is impossible to determine to what substance the name properly belongs. It is observed by Phillips (Mineralogy, p. 368), that it is blackish-brown; while according to Dr. Thomson (Inorganic Chemistry, vol. ii, p. 369), it is white.

MALTHUS. [POPULATION.]

MALTON. [YORKSIRE.]

MALVRUS. [SYLVIAE.]
gradient in soups. A few species are acid, especially Hibiscus sabdariffa. Finally the tenebrous fibres procured from the inner bark of many kinds of Malaceous plants form a good description of cordage. Hibiscus elatus and tillicus, and several kinds of Sida, are principally used for this purpose.

The only modern systematic account of the genera and species of the order is to be found in the first volume of De Candolle's *Prodomus*; but the genera have been since constructed upon principles so much more precise, and the number of species been so very considerably increased, that this enumeration is of little use at present. There is a good account of Indian species in Wight and Arnott's *Prodomus Flora Peninsula Indian Orientalis*; of Brazilian species in Auguste de St. Hilare's *Flora Brasiliensis*; and many kindreds are described in the various volumes of the *Linnea*. A few African species are also to be found in Guillemin and Perrottet's *Flora Senegambien*, vol. ii.

MALVERN, MALVERN HILLS. [Worcestershire.] MALWA. [Hindustan, p. 212.] MAMELUKE, or MERMOLLOOK, a name derived from an Arabian word signifying slaves, was that of a military body which for a long time ruled Egypt. The Memluk dynasty is reckoned in the fourteenth century by Malek Salec, grandson of Safadean, which Sa-fadean was the brother of the famous Salah Edeen, the Koord, the founder of the Eyoob dynasty of the sultans of Egypt, which succeeded the Fatimides. Malek Salec purchased the dominion of slaves in which the Turks of Asia were then glutted in consequence of the devastating wars of Gengis Khan. He chose chiefly young natives of the Caucasian regions, whom he trained to military exercises, and embodied into a corps of 12,000 men called Memluk, by which body the slave and distinctive organization, became formidable to its masters. In 1254 the Memlucks revolted and killed Tooran Shah, the last prince of the Eyoobid dynasty, and raised to the throne of Egypt El Moez, a Turkoman Memlook. El Moez was murdered in 1277 by the Porte, which Memlook called the dynasty of the Barbakery, which conquered Syria, took Damascus, and put an end to the domination of the Abbasid caliphs. In 1382 Doulet el Memlook el Borgheh, a Circassian, and grandson of the Alhumeidib dynasty, founded the dynasty of the Circassian Memlooks, which, after losing all the conquests of the Barbakies in Asia by the hands of the Ottomans, continued to rule Egypt till 1517, when Selim I., sultan of the Ottomans, marched into Egypt, defeated the Memlooks near Belqees, took Cairo, and put to death Tomaun Bey, the last of the Circassian dynasty. Selim however maintained or was obliged to maintain the Memlooks as a military aristocracy in Egypt. The Beys of the Memlooks, twenty-four in number, continued to be the governors of the districts, though subject to a Pacha appointed by the Porte, who resided at Cairo. The beys were elected by their own body. [EGYPT, Modern History of.] This aristocracy continued to rule almost independent of the Porte till Bonaparte's invasion, when the bulk of Memlook cavalry was destroyed in several brilliant but useless charges upon the French squares supported by artillery, at the battle of the Pyramids, in July. 1798. [Bona-part.] The remains of this once splendid body with their beys retreated into Upper Egypt. After the English and the Turks had reconquered Egypt in 1801, the Porte was no longer inclined to allow the Memlooks to retain their former authority, and the captain Pacha treacherously murdered several of the beys whom he had invited to a conference, and Memlooks, by a similar contrivance, destroyed nearly all the remainder of them in the citadel of Cairo. A few escaped into Dongola, but the victorious troops of the Pacha pursued them, and they are now extinct as a body. The Memlooks were reckoned amongst the most indolent of the Circassian races, and was not hereditary, but elective among them. Their morals were very depraved: they were rapacious and merciless, and their extinction has been rather an advantage than a loss to humanity.

MAMMALIA. [Sarthe?] MAMMALS, a term employed by Linnaeus to designate those animals which suckle their young, and which, in our opinion, is far preferable to the term Mammiferes generally used by the French zoologists. Mammals are vertebrated animals whose blood is red and warm, and whose system of circulation is double; whose foetus, in most species, is nourished in utero by means of a placenta; whose young, when born at the proper period, give signs of life at their birth, and are, in a state of nature, afterwards fed with milk secreted by the mamma of the mother, till they are old enough to procure their food, or to have it supplied from other sources.

LINNEUS, who makes the Mammalia the first class of the Animal Kingdom, gives the following definition:—*Haece sunt omnes quae patriis et rapinis adhuc vocantur in varia mensuris. Linneu*.

Lima, requiring reciprocally armed with teeth in most. *Penta intus viviparum, lari-feras. Senses: tongue, nostrils, eyes, ear, * touch: Cauing: hairs, S. Support (Fulcrum): four feet. except the entirely aquatic, in which the posterior or feet are bound together (composed) into the fin of the *Tal in most.*

This class Mammalia divides into orders, principally resting on the basis of dentition. His name for the more teeth, *lemures,* and for the back or grinding teeth, *molares.*

The orders, which are six in number, are comprised to three sections, depending on the nature of the extremities.

1. The Ungulata, containing the orders Brusa, Gnu, *elephants, and *several *other genera.
2. The Ungulata, comprising the genera *Bullas, and *Pecora.
3. The Mufus, consisting of the orders Cete (Whales) only.

1. The Primates consist of the genera *Homo, Simia, Lemur, and Vespertilio.
2. The Brusae use the genera *Elephas, Trachelles, Bradius, Myrmecophaga, Manis, and *Dasyopy.
3. Under the Feræ are arranged the genera *Canis, Felis, Viverra, Mustea, Ursus, Delphinæ, Tapin, *Sorex, and *Erinaceus.

The order Cete include the genera *Hystrix, Lepus, Catæ, Mus, Scirius, and Noctilio.

5. The Pecora comprehend the genera *Camelus, Machæ, Cervus, Capra, Ursus, *and the Bovidae belong to the genera *Equus, Hydropotes, *Sus, Rhinoceros, and *other genera.

6. And 7. Under the order Cete are arranged the genera *Monodon, Balæna, Physeter, and Delphinus.

For the history of the science relating to the arrangement of the Mammalia into genera, the reader is referred to the article Mammalogy, and for the natural history and organization of the beings which form the class, to that article and the articles Man, Mammary gland, Dentition, &c., as well as the various titles referable to the orders, families, and genera below, comprising the class Mammalia.

MAMMALLOGY, a hybrid word, the roots being derived from the Latin and the Greek. According M. Dumesnil has proposed the term Mystalogy, and M. de Blainville *Mystozology, as being entirely of Greek origin, and more correctly than the former term, as the word is, the term Mammalogy is in such general use by the zoologists of England and France, that it seems less objectionable to retain it, with all its faults, than to attempt to supersede it by another word, which, though it may be more correct, would be comparatively very little known.

Mammalogy then is the science which has for its object the study and classification of animals with mammae, which is to say, Man, and quadrupeds properly so call'd, including the primates and ungulates.

The objects of this science are numerically much less than those which constitute the other classes of animals, being; their bulk, as compared with that of the others, generally speaking of greater volume, and their structure must have been of the same, but not so marked in what one would say were the same, including the primates and ungulates.

For classification that of a compasely chotllyad and. Item, to a certain extent the knowledge of mammalia and the nominal distinctions, as regards their habits and external appearance, must have been of the same, but not as marked in the same. Science exhibits, and consequently the subject matter of classifications, to a considerable extent, to the languages of the Greeks and Romans, in the same language. When we come down to the 

- A placenta does not exist in the Marsupials and the Monotremata.
Aristotle, we find that the science had not proceeded further than a knowledge of the external and internal structure of these animals, without any attempt at a systematic arrangement of them. If we descend lower, we find the science in the same state, whether we consult the works of Pliny, or the treatises of writers who followed him. Conrad Gesner, though he treated of the Mammalia alphabetically in his 'History of Quadrupeds' (1551), finally divided them into groups, such as Monkeys, Horses, Deer, Oxen, &c., as indeed he did with regard to the poisonous quadrupeds in his 'Systema Vivendi'. Androvus Neston, and the rest of that class of mammalogists, seem to have followed Gesner as closely as the ancient writers followed Aristotle.

The first great step in system was made by our countryman John Ray in his ' Synopsis Methodica Animalium' (1693), wherein he separated the Mammalia into two great classes, the Ungulate, or Hoofed animals, and the Ungu- culated, or animals with nails or claws.

The Ungulate class are divided into—1, the Suidæpes, as the horse; 2, quadrupeds with a divided hoof properly so called, as the ox or sheep; and 3, quadrupeds which have the feet divided into more than two parts, as the elephant.

The animals with a divided hoof are again subdivided into two great groups: the first, the Ruminants, as the hog; 2. Ruminants, which last consist of four genera, Sheep, Goats, Stags and Deer, and Oxen.

Those of the Unguiculated Mammals which have the nails wide and resembling those of man, such as the Apes or Monkeys, are divided into a great group ruminate, as the hog; 2. Ruminants, which last consist of four genera, Sheep, Goats, Stags and Deer, and Oxen.

Our limits will not permit us to do more than allude to this order, and those who were few, who entered upon this branch of the science after Ray. Of these Seba may be considered one of the principal, and his work is justly appreciated for the number, and, generally speaking, for the accuracy of the well-executed plates which illustrate his descriptions; and there is now scarcely a species which has not been fully distinguished from the crowd of zoological authors.

Linnaus, an outline of whose system we have already given (Mammalia), fixed the science upon a basis which has been received as the foundation of all modern systems. In vain did Buffon array his animals, in his 'Histoire Naturelle' (1751), wherein he separated the Mammalia into two groups, the Ungulate and Unguiculate, each consisting of five families; in vain did Bechstein (1750) publish his 'Animal Kingdom divided into eleven classes,' containing eighteen orders and forty-two genera, some of the latter well defined and still admitted; the philosophical system of Linnaeus daily gained ground, and at last the Mammalia were separated into three great groups: Edentata, Edentata, and Edentata.

About a year before the death of Linnaeus (1777) Erxleben published his ' Systema Regni Animalis.' It contained several new genera, as for example Papi, Cerocophorus, Cercalophorus, Calithrix (all at the expense of the great Linnaean genus Simia), Lutra, Canis, Glis, Glapax, Dipus, Antilope, and Hydrochneus, all of which are still retained; and indeed his work, which should be in the hands of the student, seems to have been intended as a further development of the Linnean system, and of the principles contained therein.

The excellencies of the work last mentioned are strongly contrasted with the edition of the 'Systema Naturae' which Gmelin gave to the world in 1788. It is not a passing severe judgment to characterise it as a jumble of all that had been previously contributed to this department of zoology, and a farago of species heaped together, without care, and in many instances without inquiry. The student whose lot it may be to follow the synopsis of the Mammalia will perceive in what a labyrinth he gets involved, as soon as he sets to work upon the names and references which swell out the 'Systema Naturae' from the neat proportions which graced it when it left the hand of Linnaeus, to the undigested and overlaid mass which now confronts him.

Previously to this visitation, a work of a very different character had made its appearance. In 1780 Professor Storr published his 'Prodromus,' which gave a direction to those employed in classifying the Mammalia still in a great measure, and divided them into three Phalanxes: the first consisting of those Mammals which have feet proper for walking; the second, of those whose feet are fin-shaped, but with distinct toes; and the third, of those which have true claws with no apparent toes. These phalanxes are separated into cohorts, orders, tribes, sections, and genera; and the system is well worthy the deep attention of the reader.

Boddart (1785), in his 'Elencus Animalium,' divided the Mammalia into three great groups. This order is sub-divided into three sections: 1. Natural Mammalia; 2. Artificial Mammalia; 3. Aquatic. In the first (Terrastris) he placed—I. The Unguiculated Mammals divided into two sections: a. The Quadrupedans; b. The Unguiculata with long claws (Sloth, Bats, Armadillos, Pangolins, and other Ant-eaters). II. The Carnivorous Mammals divided into two sections: a. The Carnivora; b. The Mammalia (Glires). IV. The Ruminants. V. Unguiculata not ruminants (Hog, Horse, Tapir, Rhinoceros, and Elephant).

In 1798 Cuvier published his Elementary Table of Animals, which was afterwards further developed in his 'Guide à l'Etude Comparée des Animaux,' a work of which the English edition is probably the best known. This great zoologist bears considerable resemblance in some of its parts to the 'Prodromus' of Storr, as Cuvier himself remarks: it is so generally adopted that we shall presently give it in detail.

M. Delessart (1834—'Dictionnaire d'Histoire Naturelle'), principally taking Cuvier and Storr for his guides, divided the Mammalia into three great sections. I. The Unguiculated Mammalia. II. The Hoofed Mammalia (Mammifères à sabots). III. The Furred Mammalia (Mammifères à poils), containing those Mammals, Seals, Otters, Seals, Oxen, etc.

We now proceed to lay before the reader Cuvier's arrangement after it had received the benefit of the joint labours of M. Geoffroy and himself, and as it finally left his hands in his last edition of the 'Regne Animal'.

Class Mammifères.

Order I. Bimana. Man.


* Aristotle's classification was a classification of organs, not a classification of species.
Storr.) Gluttons (Gulo, Storr.). Ratels. Tribe 2. Digi-
tigrations. Martins (Mustela, Linn.). Skunks (Mephitis,
Cuv.). Otters (Lutra, Storr.). Dogs (Canis, Linn.). Civets
(Viverra). Genets (Genetta, Cuv.). Pantheres (Panthera
tigrades is composed of the Hyenas (Hyöna, Storr.), and
the Cats (Felis, Linn.), in which last the sanguinary de-
mend is at its height. Tribe 3. Amphibians. 1. Anura.
2. Reptiles.
**Order II. Fera (Linn.).**

* Cutting-teeth six above and below; grinders of three sorts.
  

**Order III. Cete (Linn.).**

* Skin smooth without any hair or whiskers.


  * Skin rather hairy, whiskers distinct; grinders flat-topped.

  **Fam. 3. Trichechidae.** Trichechus. 4. *Manatidae.* Manatus. 5. *Halicororidae.* Halicora, Stellerius.

**Order IV. Gliridae (Linn.).**

* Fur with scattered larger hairs or spines; tail spiny or scaly.


  **Fam. 2. Histriones.** Hystris, &c.

  * Fur with scattered hairs, tail none, or hairy.


**Order V. Ungulata (Linn.).** Bruta, Pecora, Borellus (Linn.).

* Two middle toes large, equal; bones of the metatarsus and metatarsus united.


**Fam. 2. Equidae.** Equus (Linn.). Asinus (Gray).

* Hoof three, four, or five to each foot, nearly equal; teeth nearly in one series.


**Fam. 5. Bradyphyridae.** Bradyurus, Cholepus, Megatheri, Megalonyx.

Gray then exhibits the manner in which the orders appear to be connected together, and the 'Typical' and 'Annectant Groups' of each order.

* Mr. Swainson, who does not admit Man into the zoologi-cal circle for reasons stated in his 'Natural History and Classification of Species' (1837) gives in the third part of his book an arrangement of 'The Class Mammalia, according to its natural affinities.' He makes the *Quadru-poda,* the first order, consist of the following families:—1. *Pecora,* 2. *Bovidae.* 3. *Leporidae.* 4. *Vespertilionidae,* consisting of Mr. Gray's subfamily Rhinolophina, Phallosomia, Pteropina, Noctilionia, and Vespertilionidae.


Immediately following the genus *Cavia* and its subgenera we find the 'Marsupial Rodentia: Situation unauthentic,' and next to them the family 'Marsupialidae' (Herbivorous Marsupials), formed of the genera *Halmaturus, Hypsiprymnus,* and *Phalangista,* the latter with two subgenera, *Peta-* turia and *Petaurus.*

It must refer the reader to Mr. Swainson's book for an explanation of the peculiar views of classification, affinity, and analogy developed in it.

We can only allude to the works of Pallas, Allamand, Schreber, Shaw, Maregrave, Catesby, Hernandez, D'Arca, Sonnerat, Steller, Sparrman, Le Vaillant, Bruce, Barrow, Burchell, Humboldt, Peron, Lesueur, Fischer, Lenin, Ruppell, Smith, Bennett, Bell, Owen, Ogilby, Sykes, Darwin, and a host of others, who have enriched the subject by their writings or the observations which they have made in their travels.

MAMMARY GLAND is an organ of considerable interest from its occurring only in that important class of animals known as Ungulates and Carnivora. It is equally developed in the female and male sex, and its greatest peculiarity is that, while young, their food is the milk secreted by the mammary gland of their mother.

The number of mammary glands varies in different animals. They are composed of ramified ducts which open on the mamilla or nipple or breast, and which, by the action of sucking, produces a partial vacuum over the nipple, the weight of the surrounding medium presses slightly and equally upon the surface of the breast or udder, and propels the milk from the ducts in minute and gentle streams.

This statement is taken from a paper on the Mammals of Magnolia, which is considered as the organ, which up to the period of puberty had been but little developed, enlarged; its increase of size keeps pace with the progress of gestation, and before its termination a thin serous milk is secreted. Directly after parturition the quantity of milk increases, it quickly becomes thick and rich, combining in itself all the best principles for the nourishment of the young animal. It continues to flow for a length of time proportioned to the age at which the young is able to take its food, but the greater the quantity that is consumed by the young, the more slowly the gland decreases to the same size which it had before pregnancy.

In women the mammary gland is subject to many and severe diseases; as abscess, cancer, and various tumours; but in the male, we know of few or no such diseases. (Glumbeck.)

MAMMÆA is the name of the natural family of Guttiferae, so called from the American name Mammy of M. Americana, or the American Mammee-tree, which is the only species of this genus, and forms a handsome tree with a spreading elevation under which it is compared with that of a Magnolia. The flowers are odoriferous, and in addition to liqueurs called Eau and Crème des Croisoles in some of the West India Islands. The fruit is large and has a double rind, of which the outer is thick and leathery; the inner one is thin and smooth, and the two, when ripe, may be eaten raw, or cut in slices with wine or sugar, or boiled, which deprives it of its gummy portion. It is also preserved in wine sweetened with sugar, or in brandy. (Labat.) The fruit is considered nourishing and pectic, and much esteemed in America. Attempts have been made to introduce it into this country. According to sweet, it grows freely in sandy loam; and in heavy cuttings, with the leaves not shortened, root in sand under a glass in heat.

MAMMÆLLIPORA. Bronn chooses this name instead of Atelemy, for a genus of fossil coeloptera, analogous to Aleyonium.

MAMMOTH, a term employed to designate the fossil elephants. The name has been erroneously applied sometimes to ELEPHANT, vol. i., p. 352.] MAMUN, ABUL ABBAS ABDALLAH, the seventh Abbaside caliph, was born at Bagdad, A.D. 786. He was entrusted, during the life of his father, the celebrated Harun al Rashid, with the government of Khorasan; but on the death of Ali, A.D. 806, and the succession of his brother Amin, Mamun was dethroned and commanded to repair to Bagdad. But as such a step would doubtless have been followed by his death, Mamun disobeyed the orders of the caliph, and proclaimed war against him. The contest was carried on until 818; when Bagdad was taken by Thahir and Harthemah, the general of Mamun, and Amin put to death. The early part of Mamun's reign was greatly disturbed by the pretensions of the descendants of Ali, the consan of Mohammed. [Ali.] Mamun, in order to restore peace to his empire, named one of the princes of the house of Ali as his successor and commander, and distinguished the Abbasides, should be destroyed at the court, and replaced by the green, which was worn by the descendants of the prophet. This step however accomplished a revolution in the government; the Abbasides rose against the caliph, called Mahudi by the people, and the family of Mahadi. After the end of two years, Mamun obtained the caliphate again, and, taught by experience, restored the black colour of the Abbasides and named his brother as his successor. The partisans of the Alides again rebelled against Mamun, but were unable to hold sway, and fell victims to him. In addition to these wars, Mamun was also engaged, during part of his reign, by the revolt of the caliph of Hartheim in Armenia, and by that of Thahir in Persia.

In 830 Mamun engaged in a war with XUSEPHILIS, the successor of the last mentioned. He was then the greatest man, by the refusal of the emperor to allow Leon, a celebrated teacher at Constantinople, to repair to Bagdad, whether he had been invited by the caliph. The war was carried on principally in Cilicia, during three successive campaigns; at the close of which the caliph died. His son, named Mansur, was born in 833, and was succeeded by his brother Mutasem.

Although the reign of Mamun was disturbed by so many wars and intestine commotions, yet science and literature were far more extensively cultivated than under any preceding caliph. Mamun's government has many instances to show devoted colleges and libraries in the principal towns of his dominions; and invited to his court not only Greek and Syriac, but also Hindu philosophers and mathematicians. Many of the most celebrated Greek works were translated into Arabic by his command; and among other works written during this time, we may mention 'Elementary Treatise on Algebra,' by Mohammed ibn Musa, which was published with a translation by the late D'Azaro, and by a new edition by Capoletti.

MAN. The anatomy and physiology of man are treated of under their several and appropriate heads in this work. The present article is limited to the consideration of Man as an object of natural history. The subject may be divided into three great classes: 1. The constitution and economy with those of other animals; and 2. The comparison of the various modifications of the human structures and economy in different races of men.

Specific Characters of Man. In every part of the human frame we find certain anatomical traits, the most peculiar characteristic of mankind. Examining the skeleton, we find that the two condyles, or articulating surfaces of the occipit, by which the skull is connected with the vertebrae; and the ribs, on each side, that a vertical line passing through the centre of gravity of the head, falls exactly between them and on the top of the same. The condyles are not placed at the very centre of the base of the skull, but just behind it, so as to compensate in some measure for the greater specific gravity of the head. The base of the head, and of the great vessels contained therein, is formed by the inferior sinuses, which carry it forwards and downwards, so as to see persons falling asleep in the erect posture. But the muscles attached to the back of the head are far larger and more numerous, as well as more conversely viscid, and so exercise a counter action to the head. These muscles are the back of the head, and the effort required to hold up the head is so slight, that it may be made throughout the day without producing fatigue.

The weight of the condyles moreover have a horizont al direction (when the head is carried upright), and the weight of the skull falls vertically upon them and the top of the vertebral column. Comparing these arrangements the position and direction of the occipital condyles on the other man, and find that in the latter they are placed much nearer the back of the head, and that there no
more oblique. Thus, if a line be drawn in the median plane along the base of a human skull, the foramen magnum and occipital condyles will be found immediately behind the point at which that line is bisected; while in the chimpanzee (in which also the condyles are proportionately smaller) the same part is in the center of the base. Before the method of similarly drawn, and in other animals are still farther back. Hence there is in all animals a greater proportion of the weight of the head in front of the vertebral column than there is in man; and all the parts anterior to the column are proportionately anterior. If man than in other mammals, in which the jaws, the bony palate, the basilar part of the occipital bone, and the petrous portions of the temporal, are always long and large.

Besides being placed so far behind the center of gravity of the body, the limbs are directed so much more obliquely downwards than those of man; so that, if the head were supported on the top of a vertical column, its weight (even if it fell entirely upon the condyles) would press on an inclined plane, and constantly tend to carry the head forwards and downwards. The degree of obliquity in the direction of the condyles varies in different animals. It may be nearly estimated by the angle formed by two lines, one of which is drawn in the plane of the occipital foramen, and the other from its posterior edge to the lower margin of the condyles, which is nearly horizontal in the upright position. When the head is vertical; the head, instead of being nearly balanced on the top of the column, would hang at the end of the neck, and its whole weight would have to be supported by some external force. The nearly horizontal position of the head in man is a move adapted to the erect attitude. In the chimpanzee and orang-outan its analogous position is at an oblique angle to the long axis of the pelvis, with the body supported obliquely in front of it: in other animals, as the lemur, it forms nearly a right angle; and in others, as the horse, ox, &c., an acute angle with the axis of the pelvis and spinal column. The human femur is further distinguished by its great length, by the obliquity and length of the neck, and by its being directed somewhat obliquely towards the front. This it is certain, in the erect attitude, the knees and bring them more directly under the pelvis. It is by this great length of the thigh that the portion in the length of the human thigh and arm is so much reduced in it. In the chimpanzee, the arms reach to the level of the knees, and in the orang-outan to the ankles; while in man they extend only to the middle of the thighs. In all other animals the thigh is still shorter.

In the human knee-joint we find the exposed extremities of the femur and tibia expanded so as to present a broad articulating surface; and the internal condyle of the femur lengthened, so that the whole weight of the body, when erect, falls vertically on the top of the tibia, when the weight of the body is placed.

The weight of the body is next transmitted through the tibia to the upper convex surface of the astragalus, and thence to the other bones of the foot. The human foot is, in proportion to the size of the whole body, larger, broader, and stronger than that of any other mammal. In the upright position it is at right angles with the leg, and is in contact with the ground at both ends. The sole of the foot is concave, so that the weight of the body falls on the arch of the foot; and the tarsus (supported below by a very strong ligament), represents the key-stone, and of which the principal points of support are the large and arched os calcis, and the anterior extremities of the metatarsal bones. This strength and size of his foot enable man alone of all mammals to erect himself. The natural contact of the os calcis with the ground, and its arched form, are also peculiar to him. All the aces have the os calcis small, straight, and more or less raised from the ground, which, when standing, they touch only with the outer side of the rest of the foot; while in animals more remote from
The Blumenbach's Man is a two-handed. "That," says Cuvier ("Ariste Animal, i. 780), "which constitutes the hand, properly so called, is the faculty of opposing the thumb to the other fingers to seize the most minute objects, a faculty which is carried to its highest development in man, as when the whole anterior extremity is free, and can be employed in prehension. Hands thus defined occur only in man and in monkeys; the former is therefore made to constitute a separate order, 'Bimanaus,' and the latter are included in a second order termed 'Simia.'"

Although formed on the same general plan as the anterior extremity of all vertebrated animals, the structure of the human hand is so much more complicated than theirs, and adapted to so many more intricate offices, that Sir C. Linnaeus, with those who have followed him, is disposed to define the hand as belonging exclusively to man. Its perfection as an organ of prehension is due partly to its own construction, and partly to the form of the parts with which it is connected, for 'the whole frame must conform to the nature of the hand.' This erect attitude, for example, which has been proved to be that in which animals are, is necessary to its full action, and to that wide range of motion which it receives from the arm, and which is the main object in the construction of all the parts by which the hand is connected with the trunk. And in like manner could be proved that more remotely the peculiarities of the organs of sensation, of digestion, and of other functions are adapted to the hands.

The most prominent bone, which keeps the shoulder and arm apart from the chest, man obtains, in common with all the animals which have much power in digging, running, and climbing, a great, round, and strong muscle which, like the buttck, is found in no other animal; the anterior muscle is attached only to the great toe, on which the weight of the body is often supported; while in the chimpanzee and orang, which, in man, is chiefly to be accounted for in the hands, it is more counterbalanced to the three middle toes; the serratus magnus, which, like a strap, runs to the scapula, supports the front of the trunk of quadrupeds, is proportionally small in man.

In the preceding observations, at the same time that the proportion between the hand and the rest of the body is set out, sufficient evidence has probably been adduced to prove that the erect attitude is that to which the structure of man, but of no other mammal, is best adapted. Yet some have argued the contrary from the histories and tables of some supports and men, but it has been said, when found in wobbling, the dumb, hairy, and crawling on all-fours, and who have been considered as specimen of man, under alienation, in a state of original nature. (See the histories of Peter the Wild Boy and others in Blumenbach's "Reise durch Naturgeschichte; Monboddo's "Antient Mythologies," &c.) It is sufficient to say that in the very few cases of the kind for which there is any authority, it has been clearly proved that they were merely idiotic or otherwise deficient children, who had been lost or deserted by their parents; and that the authors state them to have been either quadruped or hairy and altogether unworthy of credit. But while this class of writers has seemed anxious to reduce man to the station of the ape, another has endeavored to prove that there are some modifications of this manner by which man is most man-like is never agile or easy unless they employ all their limbs to support them. The attempts of other animals, as dogs, bears, &c., who are taught to assume the erect posture, are even more constrained than those of the monkeys.
The proportion which the cranium, or rather the cavity containing the brain, and the face, bear to each other. In many cases also it may be estimated by what is called the facial angle of Camper, which is found by drawing a line from the most prominent part of the forehead to that of the lower jaw; when one of these lines is lengthened, and the other shortened, the facial angle is increased, with another line drawn through the meatus auditus externus to the base of the nose, or (the head being held in a vertical position) with a horizontal line. In man the angle is 110°; in the adult chimpanzee (which approaches in this respect nearest to man) the facial angle is only 35°, and in the orang or satyr 30°. (Owen, in Zoöl. Dict. III.) In other cases, as in the great apes, it is still further increased by the prominence of large frontal sinuses, or by the comparative shortness of the jaws. In regard to its structure the human brain exceeds all others in the development of its cerebral hemispheres, in the number and strength of its convolutions, and in the quantity of its medullary matter in proportion to the cortical.

In the economy of the human body there are peculiarities not less marked than those in its structure. Perhaps the most characteristic is the ability which man enjoys of living on almost any part of the globe, and of surviving alike in either extreme of natural temperature. Thus the Greenlanders and Esquimaux have reached between 70° and 80° and 90° of the arctic circle, and there are various species of man of America live under the equator. But even Europeans, accustomed to a temperate climate, can bear either of these extremes of cold and heat, as has been sufficiently proved by the numerous instances in which those who have passes to the North Pole, or from the northern regions to the high northern latitudes; and on the other hand by the slight degree in which European settlers in the hottest parts of Africa are influenced by the temperature.

Man subsists with equal facility under various degrees of climate; he will live in valleys, high mountains, and desert regions, with as good a stock as in climes, where animal and vegetable food can be procured with equal facility, man is truly omnivorous; towards the poles animal food or fish becomes more exclusively his diet; and towards the equator his food is chiefly composed of vegetables: and there is no doubt that in each case for which it is most universally adopted is that which is best adapted for the health of the inhabitants.

Thus then, in his comparatively complete independence of local variation, he is, if anything, less liable to change on the whole, than the other mammals. It is singular that the animals which approach most nearly to him in structure should be amongst those who, in this respect of geographical distribution, differ most widely from him. The chimpanzees and orang-outang, for example, are confined to the coasts of Guinea, and a few other parts of Africa; and even in their native countries they occur in but small numbers. The difficulty too of removing them to colder climates, and of preserving their lives there, even with all the means we have at present. In 120° they become diseased and die. Hence we may
conclude that although he receives much aid in supporting the extremes of climate from the various means of defence with which his arts have supplied him, there is yet a strength and pliancy of frame in man which peculiarly fit him alone, for universal distribution over the surface of the earth.

Man is further remarkable for his slow growth, and for the length of time during which he remains in a state of helpless infancy and of youth. The process of ossification and development of the muscles is much more prolonged in man than in any other animal; he is unable to seek his own food for at least the three first years of his life, and does not attain to the adult period or to his full stature till he is from fifteen to twenty years old. The length of time during which man may be profitably trained is proportionally greater than that of any animal, and is especially interesting when compared with that of those who in many respects resemble him. The greatest longevity to which the animal attain is about thirty years, while in all nations of men instances occur of life being prolonged to upwards of 100 years.

However widely man may be distinguished from other animals in the peculiarities of his structure and economy utterly and red. (Researches, sec. l 175) that 'The sentiments, feelings, sympathies, internal consciousness, and mind, and the habits of life and action thence resulting, are the real and essential characteristics of humanity.' The difference in this respect between man and other animals is indeed so great, that a comparison is scarcely possible. The highest moral endowments of animals are shown in their attachment to their offspring; but this ceases when the period of helplessness is past, and there is no evidence of attachment to the young after the period of weaning. In the assured habits of some species, and the consentaneous actions of the male and female for the safety of the offspring. The arts of which animals are capable are limited and peculiar to each species; and there seems to be no evidence of a power of invention, or of construction for any purpose beyond that to which the original and instinctive powers are adapted. Among the monkeys the adults exercise authority over the young, and, it is said, maintain it even by chastisement; but there is no instance in which the stronger species has exercised authority over the weaker, or brought it into a state of servitude. Even when made the associates of man, and instructed by him, how little have animals learned: a few unmeaning tricks unwillingly performed, a few words uttered out of custom, and without a conception of their meaning, and sullen passive submission, are in general the best results that can be found. There is not a proof in the whole history of animals that any species or individual has ever made an advance towards an improvement in arts, or in its condition in the arts, living in herds, the habits of all remain the same; all of the same species appear endowed with the same faculties and dispositions, and each is in mental power the same throughout its life.

Contrast with these the progress of man. In his origin weak, naked, and defenceless, he has not only obtained dominion over all the animate creation, but the very elements are made to serve his purpose. Of the earth he has built his houses, and constructed weapons and the implements of art; he uses the wind to carry him in ships, and to prepare his food; and when the wind will not suit him, he employs fire and water to replace or to resist it. By artificial light he has prevented the inconveniences of darkness, and made his abodes in the depths of forests, in the mid-streets of deserts, marshes, and forests alike to bear his food; he has marked out and measured the course of the celestial bodies, till he has discovered from them the size and form of the earth that he himself inhabits. His union with his exalted mental endowments is man's peculiar possession of language. Other animals are naturally speechless, not from any material difference in the form of their organs (for man can teach some of these animals to talk), but from their inability to form those associations of ideas which are essential to the construction and utterance of words.

The peculiarities above described will probably be deemed sufficient to justify the separation of man as a distinct species from the animal kingdom. In its general respects indeed the difference between the lowest man and any animal is far greater than which any species can be proved or supposed to have undergone in any period of time, and under however varied circumstances; so that if degrees of difference of this kind could be measured, there would probably be as much justice as convenience in the classification of those naturalists who have attempted to infer from other animals to the greatest possible distance by constituting of the single species a separate genus and order.

We come now to the consideration of the variations to which the general characteristics of the human race are subject.

Varieties in form are of course chiefly referrible to differences in the structure and proportion of the parts of the skeleton, and we find the chief marks of distinction in the varied forms of the skull. Dr. Prochard (Researches, i. 281) refers the varieties in the form of the skull to three principal divisions:—1st. The symmetrical or oval form, in which are included all those of the Indian, the African, and the Negroid; the nearest to that of the Himalayas to the Indian Ocean, including the whole of Hindustan and the Deccan, as well as Persia and Arabia; and from the Ganges to the borders of the Atlantic, including the north of Africa and nearly the whole of Europe, from the Black Sea to the British Dominions. Among the Greeks, the Romans, and the Persians, the skull is more expanded, and the upper jawbones and symetrical arches are so formed as to give the face an oval shape, while it is nearly on a plane with the forehead and cheek-bones, and does not project towards the sides of the head. The skull is broader towards the forehead, and the part of the face is turned laterally, not forwards. The alveolar process of the upper jaw is well rounded and slightly curved vertically, so that the teeth are almost exactly perpendicular. 2nd. The narrow and elongated, or prognathous skull, which is the general form of the North American, Australian, and other neighbouring oceanic nations, and of which the most marked specimens occur in the negroes of the Gold Coast. The chief character of these skulls is that they give the face the appearance of elongation and elongation. The cheek-bones project forward and not outward. The upper jaw is lengthened and projects forwards, giving to the alveolar ridge and the teeth a similar projection, and thus diminishing the facial angle. 3rd. The broad and square-faced, in which is separated the European, or northern Asiatic nations, Samoedese. Tschuktschi, Australian, Kiaris, Tschuktschi, Kamchatkales, Tungusian, Chinese, Indo-Chinese, Tenguians and Japanese, part of the Tartar race, and of the Finnish nations of Europe, the Equinum, the Negro, the Mongol. Among the one there are no pronounced features, and the Mongols afford a good specimen of this form, and the Esquimaux an exaggerated one. Its most striking character is the lateral or outward projection of the symmetrical, so that lines drawn from each, touching the sides of the skull, would not pass through the anterior or posterior part of the forehead. The cheek-bones project from under the middle of the orbit, and turn backwards in a large arch or segment of a circle. The orbits are large and deep; the upper part of the face remarkably plane and flat; and the nasal-bones, as well as the space between the eyebrows, nearly on the same plane with the cheek-bones. The varieties of features dependent on the differences in the form of the frame-work just described will be at once evident. The first variety is distinguished by an evenness and regularity of features, and the imminence of one part in proportion to the other, a smooth and gently-rounded cheek, compressed and small lips, a flat and prominent chin, and the whole face of a tolerably regular form. The second variety has the same distinction in the form of the head, at least according to the European standard of perfection. Blumenbach has described a Greek skull in his collection, which, in the beauty of its proportions, perfectly with that of Greek sculpture, and renders it probable that the latter were actual copies of nature, and not, as some have supposed, ideal conceptions, intended to give the expression of exalted intellect or of dignity. The same author describes also the skull of a Georgian woman, exactly resembling the former, in elegance and symmetry, and says that its form agrees exactly with that of the head of a marble statue of a nymph in the Townley Collection. The features corresponding with the narrow elongated skull are admirably by the prominence of the jaws from which they acquire a peculiarly ferocious and serious expression.
man. Character. The compressed, narrow, and retracting forehead; the slightly prominent nose, with its wide expanded nostrils; the thick protruding lips, and the retracting chin; the projecting cheeks, and the heavy jaws, compose the expression of the characters which approximate, though they do not identify, the form of the negro with that of animals.

The features of the third variety differ scarcely less from the European than those of the negro, but in a different direction. Instead of the long and prominent face, we here find a face which is broadest at the point, and thence descends obliquely, with their internal angles descending towards the nose, rounded and open; the lips large, but not so prominent as those of the negro; the chin short, but not retracting under the lips.

But these varieties are not separated by very definite limits. There are numerous instances of negroes remarkable for the beauty and European character of their features; and daily observation shows Europeans who, in the narrowness of the skull, the lowness of the forehead, and the smallness of the nose, are a general type of the negro; while others in their features resemble the broad and flat-faced Tartars or Chinese. Within each of these varieties more are included numerous smaller divisions, which are certainly, though less prominently, distinct in their features from the natures of those of the Scotch, English, French, and Germans, for example, are in general distinguishable, though it would be difficult to define their differences. Similar subdivisions of character exist among all the varieties, and so fill up the intermediates between the regular and nearly perfect series, of which the Esquimaux and negro might occupy the extremities, and the European the middle place, between the broad and high features of the one, and the narrow, elongated, and depressed skull and features of the other.

Differences in the shape of the pelvis (on which depend some important differences in the external form of the body) have been often supposed characteristic of different races of men. But from an extended series of observations by Professor Weber, it has been lately shown that every form of the pelvis which deviates from the ordinary type, in whatever race it may most frequently occur, finds its analogues in other races. He has arranged the various forms of the pelvis into three groups according to the arrangement of the bones: those in which the greater part of the bone is round, the square, and the oviform or oblong, and he shows that although the first is the most general form in Europeans, the second in the Americans, the third in the Mongolians, and the last in the Africans, yet that specimens of all kinds occur in each of the races (by degrees.

The chest of the negro is somewhat more expanded than that of the European, the sternum more arched, the ribs larger, and more rounded. In general also the negro's fore-arm, measured in proportion to his upper arm and to the height of the body, is longer than in the European. The knuckles of negroes often appear to Europeans misshapen, the bones of the leg bending out from beneath them, and the feet turned outwards in the manner commonly called spayed-footed. The tibia and fibula also are much longer and more convex; the coccyx and the os calcis, instead of being arched, is nearly in a straight line with the rest of the tarsus; and the gastrocnemius muscles have the greater part of their mass high up in the legs, so that the calves seem to encroach upon the shins. The hands are generally narrow; the fingers long and very flexible.

It is from these modifications which the negro presents, and taking extreme cases of each peculiarity, that there has appeared some ground for supposing the negro to form a type peculiarly intermediate between the races of mankind. But there is no character in which the difference between the lowest negro and the highest ape is not many times greater than that between the same negro and the highest European; and in all the important points of structure which we have already enumerated, the differences which the negro presents are but slight. The length of the base of the skull, the somewhat more backward situation of the foramen magnum, the decrease of the facial angle, and the projection of the teeth, depend almost entirely on the prominence of the alveolar process of the upper jaw; and if a slight allowance be made for it, the negro in these points resembles the European. So also, in the prominence of his two ossa nasi, the position of the cranium over the greater part of the face, the equal length and approximation of all his teeth, the full development of the mental process to which are nearly or quite wanting in all apes, and numerous other essential characteristics, there is no difference between the two races. At the same time therefore that it is allowed that the characters of form which the lowest class of negroes present are not like those of the negroes of the European are, it is certain that the approximation is but slight, and that a vast space is still left between them.

It is true that there coincides with this degradation of form a very low degree of intellectual development, but it is not lower than that of the Esquimaux and Hottentot, and many of the third variety, who in some respects, as the breadth of the skull and face, are even more distantly removed from the monkeys than Europeans are.

The most characteristic of the several races of mankind. In the temperate climates of Europe the general height varies from 44 to 6 feet; the instances in which individuals have fallen short or have much exceeded this standard are too exceptional to be taken as of importance. The most obvious and native inhabitants of America great varieties occur. The Peruvians, the natives of Tierra del Fuego and of Nootka Sound, the Esquimaux, and the Chaymas are all described as very diminutive; while the Payaguas, Caribees, Cherokees, and other nations of North America, are said to be generally much above the standard of Europeans. The height of the Patagonians also, though often exaggerated, is yet remarkable; the most authentic accounts agree that they commonly attain the height of six feet, and that they are the tallest men of the world. The stature of the Europeans, that is, the Hottentots, are distinguished for their height and strength. The people of the north of Asia and the Laplanders and Samoed in Europe are generally shorter than the inhabitants of the warmer climates, but the Chinese and Japanese, who in other respects much resemble them, are of about the same stature as the rest of the Europeans.

With these varieties in stature it is interesting to compare the amounts of physical power possessed by different nations. The results of the comparison are, however, contrary to popular belief, which ascribes a decrease of physical strength proportionate to the increase of intellectual power acquired by civilization. The Spaniards in their first intercourse with America found the natives in general much stronger in body than the Spaniards; and the Indians were allowed to sustain the severe labour of the mines led to the introduction of African slaves, one of whom was equal to three or four Indians. Harens and others have found the same feebleness in the natives of various parts of the North American continent, and Pallas in the southern states. But the most exact observations were made by Peron with the dynamometer upon 12 natives of Van Diemen's Land, 17 of New Holland, 56 of the Island of Timor, 17 Frenchmen belonging to the expedition, and 14 Englishmen in the colony of New South Wales. The mean results were as follows:

<table>
<thead>
<tr>
<th>Country</th>
<th>Strength of the Arms. Kilograms</th>
<th>Strength of the Legs. Kilograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Van Diemen's Land</td>
<td>50'6</td>
<td></td>
</tr>
<tr>
<td>New Holland</td>
<td>50'8</td>
<td>10'2</td>
</tr>
<tr>
<td>Timor</td>
<td>53'7</td>
<td>15'2</td>
</tr>
<tr>
<td>France</td>
<td>69'2</td>
<td>18'3</td>
</tr>
<tr>
<td>England</td>
<td>71'4</td>
<td></td>
</tr>
</tbody>
</table>

The substance on which the varieties of colour in the human race depend, is seated chiefly in the soft and most internal layers of the cuticle; the true skin (cutis, dermis), is similar in all nations, and the outer hardened layers of the cuticle have only a light tinge of colour; those subordinate to it are those which is often called the rete mucosum. [Cuticle; Skin.] The human complexion depends in part on the condition of the cutis and its vessels, and in part on that of the cuticle. In white nations, according to the fulness or comparative dryness of the blood,
vessels of the skin, we find all the gradations of complexion, from the deep redness of full health, to the blanched pallor of sickness; and in negroes, the same changes are indicated by a greater intensity of the blackness and by a dull leaden hue. These differences however chiefly characterize the national type; they are not so perceptible in the cuticle. A thick and opaque though colourless cuticle, obscuring the blood of the cutis, assists greatly in giving that deadness of hue and phlegmatic aspect which distinguishes some Europeans from others who with a thinner and more transparent epidermis are marked by a florid ruddy complexion. As the cuticle becomes darker in colour, it obscures more completely the colour of the blood in the subjacent tissue, and hence it is only in nations of light complexion that sudden blushing or paleness is at once perceptible.

With the variations in the colour of the skin there generally coincide analogous differences in the hair and eyes. It is probable indeed that the colouring matter is the same in all; being combined in the cuticle with its peculiar cells and scales, in the hair with those appendages. The majority of the hair in the chorioid membrane and uvea with their minute roundish particles.

Dr. Prichard refers all the differences of complexion in man to three principal varieties, viz. 1. The Melanomous, or black-haired, being among the European nations, of which the complexion is generally black, except in the northern parts of Europe and Asia. The coincident colour of the skin varies from a deep black, as in some Africans, to a much lighter or more dilute shade. In the copper-coloured nations of America and Africa the dusky hue is not so perceptible, while in the black-haired nations of Asia it is mixed with a tinge of yellow. In intensity of colour there is every shade from the black of the Senegale negro to the little olive of the northern Hindus, and from the latter there may be traced every variety of shade among the Melanomous of China and Japan. The black-haired Asians are the swarthy Spaniards, and of black-haired Europeans in general.

2. The Leucous, or Albino variety, examples of which occur in all countries [Albino], but perhaps most frequently in hot climates. They are distinguished by the total absence of the black pigment of the hair, and eyes; hence their skin is of a milk-white or pinkish-blue, the hair silvery-white or at most yellowish, the irides rosy and the pupil intensely red. The Xanthous, or yellow-haired variety, which includes those individuals who have light-brown, auburn, yellow, or red hair. Their general complexion is fair, acquiring on exposure to heat and light not a brown hue, but more or less of a red tint. Their eyes are light coloured.

This is the variety most prevalent in the temperate coastal regions of Europe and Asia, and among the swarthy Spaniards, and of black-haired Europeans in general. This variety may spring up in any black-haired tribe; as it has in the Jews, who, though generally black haired, present many examples of the light fair complexion. Dr. Prichard (Lectures, &c., i. 228) observes that Dr. Humboldt says that the Peruvians can by the sense of smell alone distinguish the European, the American Indian, and the negro. The cuticle of the dark tribes is thicker and coarser than that of white nations, and, from the greater difficulty of separating the two tissues, it leaves a more perceptible mark on the skin. The negro has no rete mucosum, or soft cuticle, in Europeans. The hair also varies almost as much in its texture as in its colour. Its chief varieties are observed in the copious, long, soft, and more or less curly hair of the colourless nations in Europe; the fine, straight, and scanty hair of the Esk imlanders; and the black, fine, wiry, curl-p hair of the negro. A very general characteristic of the darker-coloured nations is either an entire want of beard, or a very scanty one developed later in life than in the white races. Dr. Lawrence (Lectures, 272) has adduced proofs of this in the Mongols, the Chinese, Japanese, Malays, South Sea islanders, negroes, and the Indians of North and South America; but the fact has been somewhat obscured by the authorities who have more especially attended to the names of extirpating the little hair which they have.

In the performance of the several functions of the economy, it has not yet appeared that any fixed difference exists in the several races of men, except in cases in which the variation is due to the difference of climate, and hence alike in all races when subjected to the same influences.

In physical endowments also, however great may be the distance between the degrees of intellectual and moral elevation possessed by civilized and uncivilized nations, yet there is sufficient theophrastic evidence to prove that in all there may be the same mental endowments, similar natural predilections and impressions, the same consciousness, sentiments, propensities, in short a common physical nature, or a common mind. (See Prichard's Researches.)

This accordance in the physiological and psychical properties of all nations affords one of the strongest possible arguments in favour of the whole human race being but one species; for, as Dr. Prichard observes, the physiological characters of race are liable to few and unimportant modifications, and the number of individuals spread over the greater part of the globe no other differences occur, either in the average length of life, or the extreme length occasionally attained, in the periods of gestation, of infancy, of puberty, and of other stages of life. The same degrees of temperature, latitude, and intellectual faculties, than may be fairly attributed to the differences of external circumstances, it may be once concluded that they are all members of the same family, and the offspring of one common stock. This accordance in the physiological and psychical characters of the inhabitants of the different climates, and of those individuals, of which from their forms alone it might be difficult to determine whether they belonged to the same or different species, a diversity occurs in their physiological characters. Thus the wolf and dog, although in many other respects closely resembling each other, differ in all but the same manner that the offspring of heredity, having a clime of ninety days, and the bitch of whatever race only sixty-two or sixty-three. In like manner the dog is strongly distinguished from the wolf in his inclination, which is everywhere observable, to associate with man; and the fox, from both the wolf and dog, in its solitary habits. Yet in these forms agree so nearly, that some naturalists have deemed them to be the same species. Similar differences may be observed in the ox kind, between the domesticated and wild, if, which, though nearly related to him in form, are totally different kinds. So also the most marked differences between the sheep and its varieties, and the goat are to be found in their instincts and consequent modes of life, and so on throughout the whole animal kingdom. All this, and more, is adduced to prove the permanence of physiological and psychical characters in different species, and their comparative independence of those influences by which modifications in form and colour are produced.

It is necessary however to show that the structural differences which seem to distinguish so clearly the several nations of man kind coincide with similar variations in other animals which are descended from a common stock. Such variations occur especially in animals which have been domesticated, and on this account such animals are more or less subjected to analogous those under which man has fallen in the progress or decline of civilization. No one, for example, will be inclined to deny that the varieties of dogs which there is reason to believe are all of one species, present far greater and more striking examples of this, than those parts of their habits and instincts, than any that are observed in man. And it is worthy of observation that in the most highly domesticated races, as the spaniel, the retriever, a more fully developed, and recedes further from the form of the wild wolf, or dog, than the skunk and the sable, who have been cultivated, as the mastiff. In this we can trace a series of varieties very analogous to those of the monkey, the magpie, and the highly civilized European.

The races of swine present even more remarkable in the changes of race, which have been maintained in the race, as by Blumenbach (Befrührte zur Naturgesch.) it is certain that these all descend from the wild boar; and it is equally certain that swine were unknown in America till recently.
there by the Spaniards. Yet in that country they have al-
ready degenerated into breeds very different from each other
and from their original. Those taken to Cuba have be-
come a distinct variety of both the white and brown
horses, and are more than twice as large as their progenitors. In Nor-
mandy the swine are remarkable for the length of the bone of
the hind leg. Swine with solid hoofs were known to the an-
tients, and large breeds of them are found in Hungary and
Sweden. In some also the hoof is divided into five efts. In
Greece they have long ears couched upon the back; in China,
a large pendulant belly and very short legs; at Cape Verdi and
other places, very large curved tusks. Thus then in one species we find changes even greater than those which occur among species, properly so called, Blumen-
tbon says that the whole difference between the cranium of the negro and that of a European is by no means greater than
that which exists between the cranium of the wild boar and
that of the domestic swine. An examination of the different
breeds of sheep, horses, oxen, goats, cats, rabbits, and still
more of domestic fowl, would in like manner show that all
these species, even while under observation, are subject
to greater variations than are found in the different races of
men.

In respect of colour, a perfect analogy holds between the
varieties of domestic animals and those of men. In all those enumerated above, examples occur of the melan-
comous, leucous, and xanthous varieties springing up casually or existing constantly in particular breeds. Thus even the species of domesticated europaeans. The negro race is recognised by their colour as well as their forms. Azara remarks of the horses and oxen of Paraguay (where both species have run wild and multiplied very rapidly) that while all those that are domesticated vary considerably in colour, those that are wild are quite uniform in this respect, and recognised by their colour as well as their forms. Azara remarks of the horses and oxen of Paraguay (where both species have run wild and multiplied very rapidly) that while all those that are domesticated vary considerably in colour, those that are wild are quite uniform in this respect, and

The analogy between the variations to which domesticated
and more rarely wild) animals are subject, and those which are
observed in men, is a strong argument for the unity of the
human species. Another which deserves much weight is
drawn from the propagation of the several races. It is well
known that among all other animals the hybrid pro-
ductions of parents of different species are either quite ban-
ished, or at least very rare in the wild state. All this is true
and that an intermediate race cannot be maintained even to
the second generation without a return to the pure blood of
one or other parent. On the other hand it is observed among
domestic animals that the progeny of different vari-
eties hybridised together; and as the breeds vary much more
prolific than their parents; so that intermediate races are
apt very soon to become more numerous than the orig-
nals from which they sprang. Exactly the same prin-
ciple holds in the human race. All nations propagate according to Dr. Prichard and Dr. Frézilas, the peculiar character of the progeny of parents of different nations have in
many instances exceeded those from whom they sprung in
vigour and in the tendency to multiplication.

Lastly, a consideration of the diseases to which mankind
are subject shows that the greater part of them are com-
mon to all, though modified in different climates, and though
a few produced by local circumstances are peculiar to indi-
vidual tribes.

From these facts therefore, by which it is shown that in
all the characters in which external circumstances have
least influence the whole human race agree, while in others
more easily modified they present only those changes which
are observed to an equal or even a greater extent in animals
known to have descended from a common stock, it may
fairly be concluded that mankind is composed of but one
species. The characters of this species given by Blumen-
tbon, and generally received, are: Erect, two-handed, un-
armed, rational, endowed with speech; a prominent chin;
four incisor teeth above and below; all the teeth equally
apposed to one another; able to make use of arms as well
as other; the lower incisors erect. The same author divides
the species into five varieties, whose characters are as fol-
lows (Lawrence, Lectures, p. 477)— 1. Caucasian variety: a
white skin, either with a fair rosy tint, or inclining to brown
or black, with various colours, copious, soft, and generally curved or waving. Irids dark in those with brown skin; light in the fair or rosy complexioned. Large cranium with small face; the upper and anterior regions of the form particularly developed,
breadth varies from about 80 to 11 miles; but is much narrower on the extremities, and its circumference is about 75 miles. Its surface is about 220 square miles. The Camp of Man is a small island situated to the south-west of the island, nearly a mile from it, and from 3 to 5 miles in circumference. The Kitterlins, another small rocky island, is situated off the south-western extremity of Man, and has the appearance of an oak or a large pine tree. The Island of Man is the Mona of Caesar, the Monæa of Pliny, Monæa of Ptolemy, Menæa of Orosius, and Bede, and Eubonia of Nennius. Its derivation is probably from the British word 'man,' which means isolated.

The island is intersected by two main mountains, which runs from north-east to south-west nearly through its whole length, and chiefly occupies the central parts. Dr. Berger, who has fixed the heights of 89 of these hills, considers them to compose three chains, separated from each other by high tablelands, and crossed by three very narrow openings. Snaddell, the highest point of them all, is 2004 feet above the level of the sea, and North Barrule rises to 1804 feet. The mountains, commons, and waste lands are supposed to cover 50,000 acres, leaving about 90,000 acres for cultivation. En. Ireland, and Wales are visible from the summits of the mountains on a clear day. The Neck, Sulby, and other streams which flow from the mountains enter the sea at Peel, Laxey, Douglas, and Ramsey; and many pools are formed on the shores of the island.

The rocks of mica-slate and clay slate compose all the mountains. These slates form also the coast at Spanish Head, where some precipices exceed 300 feet in height. The summit of one of the cliffs contains a druidical monument of great size. They are found in the south-western summit of which is covered with grass. The base of this mountain is rich in metals. The galena which is found here contains from 90 to 130 ounces of silver per ton. Copper pyrites has 5 ounces of silver per ton, and black sheet iron 57 per cent. Clay-slate forms the largest portion of the island and nearly all the Camp. In one of the varieties of this slate, found towards its junction with the granite and rocks, the surfaces of the sheets shine with metallic lustre. A stratified grey stone, which is used in building, is found on the east side of the island. This slate is of great variety, at Spanish Head, is used for lintels, &c. The roof-slate, drawing-slate, and one of a vermilion colour near Bradhead, make up the other varieties of clay-slate found in the island. The secondary slate formation, resting on the main, consists of granite, granite-slate, and old red-sandstone, and forms the greater part of the rocky sea-coast of the island, but does not extend much inland. The cliffs of this formation on the coast at Spanish Head seldom exceed 200 feet, and present a bold shore. The coast on the south and west coast, about two miles in width, consisting of red sandstone, of which Peel Castle is built. Limestone extends several miles on each side of Castletown. The steps at the north of Man, near King's Stand, and chapter by Bishop Wilson, consist of the first variety of this rock. Castle Rushen was built of the second variety, which is of a bluish-grey colour. The third variety, of a light grey colour, consists chiefly of shells. The fourth variety is magnesian, rarely contains organic remains, and its colour is yellow or white grey. Near Poolvash veins of trap, from two to six feet broad, break through the dark grey limestone. Boulders occur, of which the most numerous are granite, which differs from the granite-slate. The quartz is scattered from north to south, and the blocks of clay-slate and mica-slate mixed with the quartz prove it to belong to the island. The other boulders not formed of quartz appear to have come from the north and north-west, and may be the result of the erosion of the sides of one of the highest mountains. Boulders of sienite form a druidical circle near Bishop's Court. Granite in situ, containing mica, felspar, and quartz, is found in blocks on the north side of South Barrule. The decomposition of the upper part forms the powder, and is used for polishing iron.

The soil in the south part of the island is a light clay formed by the decomposition of the clay-slate. The mountainous district is adapted only for pasturage, and judicious culture alone can render the hilly parts productive. The soil however in the level country, extending from Kirknichael to the north-eastern extremity of the island, consists of sand, clay, and peat, and contains excellent marl. The soil in the neighbourhood of Castletown is well adapted for wheat, and the abundance of lime supplies the farms with a cheap manure. The climate, although variable, damp, and windy, is temperate. The highest and lowest temperatures observed are about 77° and 26° Fahr., respectively: the mean annual temperature is about 49°. The annual rainfall is about 41 inches.

The harvests are frequently late, owing to the climate. The agriculture of the country, in consequence of the attention paid to the herring-fishery, was left very much to the women, who were accustomed to perform all the work of the fields. The land cultivated is from 10 to 15 acres, which, at 30 acres per acre, produces 30,000 quarters; and, 13,000 acres of oats, at 3 quarters, produces 39,000 quarters. The Houghton sheep, peculiar to the island, are slow feeders and long in coming to maturity; their wool is much used for making stockings. A judicious selection of sheep breeds would greatly improve the wool.

The annual value of the land among the hills varies from 55 to 100s. per acre, and in some of the best cultivated districts amounts to 40s., and near the towns is still higher. The value of the land is reduced by the small size of the farms, although more attention is paid to them than formerly. Wheat, and in some years potatoes, have been exported in very considerable quantities. The turnip husbandry has been much improved lately, and is steadily advancing in other parts of the island. There are many place names, particularly in the Camp of Man, which will soon make this desolate spot productive. The best means for effecting durable improvements in the agriculture of the island are a judicious adaptation of stocks to the different soils. Thus the hayfields and galway will suit in some parts and terraces become the property of the kings of England.

The island of Man is the property of the Isle of Man. It was governed by a succession of Norwegian kings, until Magnus, finding himself unable to preserve the Western Isles, sold them to Alexander III, king of Scotland, in 1234. Alexander subsequently sold it to the Pope, and in 1323 it was sold to Robert Bruce, king of Scotland, for 47,000 marks, which was paid to the Pope. The King of Scotland confirmed the grant, and the King of England, in 1307 Edward II, bestowed this island first upon the earl of Cornwall, and then upon Henry Beaumont. The Scots, under Robert Bruce, granted the Isle of Man to the Bishop of Llandudno, in 1357, when the earl of Shrewsbury wrested it from Scotland in the reign of Edward III, and sold it to the earl of Wiltshire, who was afterwards executed for high treason, and his estates confiscated. Henry IV, granted it to Henry Percy, earl of Northumberland. The Isle of Man was given to King Henry Percy by the earl of Pembroke, in the reign of Edward III, and confirmed to the earl of Wiltshire, who was afterwards executed for high treason, and his estates confiscated. Henry Percy being attainted of high treason, the Isle of Man forfeited, the king of England gave it, with the patronage of the bishopric and of other ecclesiastical privileges, to William Stanley and his heirs, afterwards the bishops of Chester. For his services in the reign of Henry Percy, on condition that he should give the kings of England two falcons on their coronation. Thomas earl of Derby relinquished the title of king of Man, and took that of lord. James I. made a new grant of the island, in 1609, and in the reign of the sixth James, the earl of Derby's grant confirmed. James earl of Derby, in consequence of his adherence to Charles I., was taken prisoner and executed at Bolton, in 1631. His wife defended Castle Rushen.
to which she retired, until Christian, on whom she relied, and who had the command of the forces, capitulated to Birch and Dunsmoith, who had invaded the island with ten vessels. The same day, with the island to Lord Fairfax. King Charles II., on his accession to the throne, gave it to the earl of Derby, the son of the earl who had been beheaded. James earl of Derby dying without issue, the crown passed to the third earl of Derby, who was descended from the youngest daughter of the seventh earl of Derby. As both public justice and the revenues of the kingdom were injured by the island affording undue protection to debtors, outlawed, and smugglers, the British parliament, met in 1725, erected a new earl of Derby to sell his royalty and revenue. Various causes however prevented the sale being completed until 1764, when the duke of Athol sold his sovereign rights for 70,000l., with 1 a civil patronage, and the two castles of Peel and Castletown. The duke however still retained the title of lord of Man, enjoyed all its ecclesiastical patronage, with mines, minerals, treasure trove, and other privileges. The duke, after repeated applications to government, obtained a perpetual grant of a fourth of the net customary revenue of the island to proprietor-general by a subsequent arrangement with the duke on the part of the English government (6 George IV., c. 34) Great Britain now enjoys all the sovereign rights and privileges of the island. The customs of the ports are also vested in the crown, and are collected annually; but were assessed and divided by act of parliament (chap. 115), which established the privilege of licensing such a stipulated quantity of certain goods charged with specified duties as will serve for the consumption of the inhabitants of the island.

No part of the king's dominions is so much in Danish remains. The various tumuli, barrows, weapons, coins, and Runic characters afford clear evidence of the connection which the Northmen had with this island. Some Druidical temples have been discovered. The remains of Ruhen Abbey, which belonged to the Cluniac order, and of another near Douglas, for female votaries, supposed to have been founded by St. Bridget, show the influence of the church during the middle ages. The town is a half broad, with two churches, of which one, the Church of Man, is divided into three stages, which are raised about three feet above each other, and proportionally diminished both in circuit and width until they approach the summit, which is the site of the ancient church. The other (a juridical hill) is situated near the intersection of the high road from Castletown to Ramsey with that from Douglas to Peel.

The whole island is formerly divided into 600 portions, called manors or lands; but this number was increased, according to the authority of Fethnan, in 1798, to 750. Possession for twenty-one years gives a good title to property. The right of pasture for a certain number of cattle on the commons, and of quarrying stones and digging peat, belongs to the landholders.

The principal towns in the island are Castletown, Douglas, Peel, and Ramsey. Castletown, situated in the south-west of the island, is a neat town, with spacious and regular streets. There is an open well-built square. The houses are built on the sea-front, and are opened into a bay in the slope of a crescent, the extremities of which project into the sea. Castle Ruhen, in Castletown, was built, according to tradition, in the year 966. It is still inhabited by the abbot, and successively by various masters, was built by the exertions of the late Bishop Ward, aided by 1000l. left by Bishop Barrow. There is also a neat chapel adjoining the college. The courts of chancery and common law are held in Castletown, and it is the residence of the governor. The House of Keys meets here, and the number of houses in the town is calculated at 500, and the population in 1831 was 2077. When the last census was taken the number of prisoners in the gaol of Castle Rushen was 12 males and 3 females.

Douglas, in the parish of Kirkbystead, formerly written Dufglass, was divided by turf to derive its name from the two rivers Doo and Glass, is situated on the south-east coast of the island. The bay extends three miles, from Clayhead to Douglas Promontory, in the form of a crescent, and is sheltered from the north-west. The beauty of the scenery, the magnificent appearance of Castle Mona, built by the duke of Athol, and the numerous gentlemen's seats and neat cottages which surround the town, give the place a very agreeable appearance. The pier, which is 300 feet long and 40 ft. broad, was built by the government at the cost of 25,000l.

The old streets are generally very irregular, but some which have been lately finished, or are now in progress, are regularly built. The street which fronts the river forms a straight line, and is built of bricks. The church of St. Mary was erected about 1245, is the cathedral church of the island, and is now only used for a burying-place. Peel has only one church. The Methodist church is a plain building, and among the oldest dissenters. There is an endowed school for grammar and mathematics. No attention is now paid to the harbour, and the pier is altogether destroyed. The town, which flourished through smuggling, is now, since it has ceased, a very decayed condition. The population in 1831 was only 1729.

Ramsey is situated on a spacious bay, where there is safe anchorage, on the north-eastern coast of the island. It is built in a straggling and irregular manner. In this town are the courts of law, and the Corn Exchange, and part of the island is held. The Methodists are the most numerous dissenters. Its population in 1831 was 1754.

The herring-fishery employs about 250 boats, of from 15 to 30 tons burthen, and from 2000 to 3000 fishermen. The value of some of the boats, nets, and other apparatus is 20,000/. Successful fishermen at present yield 40,000 or 50,000 barrels of herrings, of which one-third are used on the island. The deep fishing, if properly followed out, would add very much to the wealth of the island, and would form an active body of permanent fishers.

Duties levied on imported goods, charges on vessels and boats trading to the island, the harbour dues, taxes on dogs, carriages, and public-houses, are the taxes of the island. The two last are taxed. The bridges. The customs average from 20,000l. to 25,000l. After paying salaries to the officers employed by government, a surplus is annually remitted to England of from 12,000l. to 15,000l.

Two steam-vessels ply between Liverpool and the island: one is from Dublin to Whitehaven which calls at Douglas, and there is constant communication between Scotland and the island.

The established religion is that of the Church of England. All denominations of English Christians have the free exercise of their religion. The Methodists are supposed to be nearly one-tenth of the population. The value of thir-
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of seventeen livings in the diocese is 906, per annum each. The bishop see is supposed to have been fixed at Sodor in the ninth century, but the site of this place is not now known. The bishop of Sodor and Man, whose authority is wholly confined to this island, is a suffragan of the archbishop of York. He has no seat in England, though his see is situated in the west of this island, by the Act of Settlement, a delivery from their vassalage to the lord of the island, and manfully and successfully defended the interests of his clergy against the same noble family. He translated various works of his school and composed the translation of the Scripture into that tongue, which was completed under Hildesley. The whole island felt for him the affection of a father, and the greatest pleasure of the people was to receive his benediction. Although offered a bishopric in England, he preferred his own little island and narrow income to rich preferment in his native country. His code for conducting the affairs of his diocese was so perfect, that it has been observed of his, that it would fully supply their laws, and that it has been distinguished by greater originality and vigour of mind, but few have equalled him in Christian charity and benevolence.

The bishop of Sodor and Man has an archdeacon and his assistant, two vicars-general, and an episcopal registrar, and one of his clergy is a member of the Ecclesiastical courts for the proving of wills, granting administration, and carrying on suits against executors and administrators, are held by the bishop or his vicar-general for one half of the year, and by the archdeacon or his officer for the other. There is an appeal from the council court to all spiritual affairs to the archdeacon of York. The vicars-general hold a court every Friday. The clergy and their vestry are assembled every year in convocation at the bishop's court, and a consistorial court is convened on the last Thursday of every month.

A Bank of England has been established in the island and maintained in one year's time.

There are no barristers, and the services of the attorneys, who act both as attorneys and barristers, are in many cases rendered unnecessary by the clients pleading their own causes. Law is cheap, and litigation is common. The Manx agricultural population, who are generally yeomen, are, for the most part, open and kind; and most of them have all the necessaries, and some of them the comforts of life.

The House of Keys, which has both a legislative and judicial character, consists of 24 of the principal communicants, chosen by vote of the tenants of the island. They meet in the summer and have attained the age of twenty-one. They are now a self-elected body, but were formerly chosen by the people, and were the organ by which they acted. The two deemsters have equal jurisdiction, and are judges in civil and criminal cases. The island is held by the governor and lieutenant, where the governor acts as chancellor, with the assistance of the deemsters and other chief officers. The Court of Exchequer is generally held immediately after the former, and the governor, assisted by the deemster, is sole judge. This court takes cognisance of all matters connected with the revenues. The common-law courts are held at different places for the different shadings in which the island is divided, called Glenfaba, Michael, Garff, Middle, and Rushen. The courts at Peel are for the shadings of Garff, Middle, and Rushen; and for the Shadings of Garff and Middle; at Castletown for the shadings of Middle and Rushen. All disputes about land and all personal actions for the recovery of damages are tried in this court before a jury. The deemsters administer the oath in the Manx language, deliver the charge, and receive the verdict. There is an appeal from the judgment of a court of common-law, first to the House of Keys, afterwards to the governor, and finally to the privy-council. There is a general gaol delivered twice in the year. The high bailiffs, who act as magis ters, and are elected by the island, are elected in 1777, and they hear and determine all cases under forty shillings; they also maintain the peace and apprehend offenders.

Bishop Barrow formed a school, in 1668, in every parish in the island, and Bishop Wilson says, in 1747, 'We have petty schools, which are the foundation of catechising in every parish, and, though meanly endowed, may by care become special means of improvement.' The teaching of the Manx language, which is a dialect of the Erse or Celt, has contributed to the general improvement of the natives, all of whom will probably in a short time be able to speak and read English. The present bishop, Dr. Philpots, has taken much pains to promote the religious knowledge and intellectual improvement of the inhabitants.

Population.—Bede states that the island contained only 300 families, or about 1600 persons, in the eighth century. Holinshed, in 1584, says, 'There were formerly about 2000 in this island, but now scarcely half that number.' In 1667 it contained 2531 men between the ages of 16 and 60. In 1726 the population was 14,027; in 1755 it amounted to 19,144; in 1784, to 24,524; and in 1791, to 27,113. According to the latest returns, the population of the island is 41,000. The increase during the ten years preceding 1831 amounted only to 919 persons; and the chief places where this took place were Douglas, Kirkpatrick, and Ramsey. The manufacturers in the Isle of Man are generally weavers and a few spinners.

(Townley's Journal in the Isle of Man; Pell's Tour through the Isle of Man; Wood's Account of the past and present State of the Isle of Man; Commissioner's Report; Population Returns: Education Returns; Wilson's Statistical Account of the Isle of Man; Communications from the Island.)

MANAR, Island [Ceylon].

MANAKINS, the name of a group of small birds remarkable for the rich tints of their plumage (Pirra of the family of Fines). The name of a family of the Amphilochini, under the name of Pipris.

MANATEE [Whales].

MANCHA, L.A., a province of Spain, bounded on the north by Toledo in New Castile, on the south by Andalucia, on the east by Andalucia and Valencia, and on the west by Extremadura. Its greatest length is 160 miles, and its greatest breadth 100. It contains about 7200 square miles. Its population, according to the census of 1785, amounted to 206,160 souls, of whom 749 were priests, 729 monks, and 1165 were in religious houses in the last fifty years however it has somewhat increased, and may now present 250,000.

The country for the most part consists of manzie plains, elevated 2000 feet or more above the level of the sea, barren, sunburnt, and desolate, with scarcely a tree or bush to relieve their dreary monotony, and affording only a scanty pasture to vast numbers of mere sheep. The towns and villages are mean and ruinous, indicative of the decay of the province. Cultivation is almost confined to the irrigated ground near the seashore. In its great defect is its natural beauty. La Mancha bears a striking contrast to the fertile and picturesque regions to the south and east. Such is the centre of the province. Its frontiers are mountainous. On the south, forming the boundary between La Mancha and Andalucia, there is the lofty chain of the Sierras, and on the north the mountains of Toledo, almost wholly in the province of that name; and on the east of La Mancha, but within its frontiers, is the Sierra de Alcaraz.

The province is divided into Upper and Lower La Mancha. The capital is Ciudad Real, situated in a fertile plain, and formerly a flourishing city; but its trade and manufacture of wool and leather are now almost extinct, and its population has dwindled down to 8000 or 9000. It stands on the Manzanares, and its cinnamon department is the source of the Manzanares, which are several very black rivers which are occasioned by occasional fall of water. The principal cities of importance are Almagro, Manzanares, Val de Pena, Almaden, Quintanar de la Orden, and Tobo—mansioned by Cervantes.

The climate of La Mancha is severely hot in summer, and rendered severely cold in winter by keen winds, though snow and ice are rare, except on the mountains. The soil is poor; it is parched by a burning sun, and scarcely refreshed by rivers; for the Guadiana, the Manzanares, and the Guadalquivir, which are the only three rivers of any importance in the province, are made to flow over desolate and unfitted plains and deserts. In consequence, the Guadiana, the Guadalquivir, and the Guadianas, are more rivulets. The Guadiana, which rises in the Sierra de Alcaraz, and is the greatest part of the province, is of considerable volume. About four leagues from its source it loses itself in a marsh and after running under ground for five leagues, reappears at the small lakes called the Eyes of the Guadiana. That remarkable phenomenon has given rise to the saying that
there is in Spain a bridge five leagues in length. The population of La Mancha is principally agricultural. Wages for field labour are three reals, or sevenpence-farthig sterling per diem. The productions are corn, especially oats—oats, which grow in the neighbourhood of Ciudad Real, Almedínas, and Cape la Puebla. The market at Almedínas is so cheap that a gallon costs no more than fourpence sterling. The wine of Val de Peñas is the most esteemed: it is a red wine, light and racy, but, unless drunk in the province, is much inferior in flavour by the skins in which it is customary to transport wines in Spain. Its price on the spot is about 3l. 10s. per pipe. La Mancha also produces some saffron and honey, but scarcely any fruit. The miles of La Mancha are famed for their great size; mules and asses are used for all the purposes of husbandry, as there is no machinery. There are but few trees, consequently not to be obtained, but mutton costs only about 2d. and bread 1d. per lb.

La Mancha is rich in mineral productions. There is a mine of silver, at present abandoned, together with several of antimony, near Almodóvar del Campo; and a mine of mercury, belonging to the crown, and very productive, at Almadén. [Almadén.] Ochra, rock-crystal, bode, calamine, and cinnabar are also found in La Mancha. There are likewise several springs of mineral waters, both hot and cold.

La Mancha is half broad in all its parts, and manufactures, which have greatly decayed; but the spinning of wool still gives employment to several thousands of the population. Flannel, blond lace, leather gloves, hard soap, and gunpowder are also manufactured, but all on a small scale. The chief town is a still lower ebb; and were it not for the productions of the soil with which La Mancha supplies the other provinces, it would be utterly dead. In exchange for these, La Mancha receives articles of luxury, and even many of the necessaries of life.

The Manchegos are grave, solemn, and punctilious, but courteous, peaceable, and good-humoured. The lower orders are hardy, industrious, frugal, and little addicted to pleasure. Everything indeed in La Mancha partakes of the melancholy tinge of the scenery; and were it not for the charm with which Cervantes has invested the province, and the similarity of manners and customs existing at the present day to those depicted in his immortal work, La Mancha would be to the traveller the most dreary and uninteresting part of Spain.

(Laboide's Itinéraire Descriptif de l'Espagne; Townsend's Journey Through Spain; Inglis's Spain in 1830; Cruz, Visage de Espada.)

MANCHE, a department of France, deriving its name from the river Manche, or English Channel, on the coast of which it lies. It is bounded on the west, north, and north-east by the Channel; on the east by the department of Calvados; on the south-east by that of Orne; and on the south by those of Mayenne and Ille et Vilaine. Its form is an almost perfect rectangle, having its greatest length from north by west to south by east, from Cape de la Hague to the neighbourhood of St. James, 92 miles; and it greatest breadth from Pontorson through Mortain to the border of the department of Orne, 39 miles. Its area is estimated at 1298 square miles, which is rather under the average area of the French departments, and about equal to the joint areas of the English counties of Kent and Surrey. The population of the department in 1831 was 591,384; in 1836 it was 594,392, showing an increase of 3,008 in five years, and giving 258 inhabitants to a square mile. In amount and density of population the department exceeds the average of the French departments in the proportion of five to three; but is much exceeded by the English counties with which we have compared it. The chief town is St. Lô on the river Vire, in 49° 27' N. lat. and 1° 6' W. long. 132 miles from Paris, in a direct line west by north, or 171 miles by the road through Mantes, Evreux, Caen, and Bayeux.

The coast-line forms on the south-western side of the department the bay of St. Michael, which is occupied by shoals, intersected by the channels of the rivers that empty themselves into the bay. From this bay the coast runs in a tolerably regular line north by west to the village of Carteret, receiving the Sienne, the Ay, and some other small streams. From the village and small sandy haven of Carteret the coast runs north to the rocky headlands of Cape la Hogue and Cape de Jobourg, between which is the small bay (Anse) of Vauville. Near the Nez de Jobourg is Cape la Hogue, the north-western point of the rectangle. Opposite to the western coast are the little island of Chaussey with its granite quarries, and the Channel Islands, which belong to England; Jersey is opposite the mouth of the Ay, and Aurigney or Alderney, the nearest to the French coast, is opposite Cape la Hogue, from which it is separated by the Raz de Blanchart, or, as the English term it, the Race of Alderney. The northern coast from Cape la Hogue to Pointe Barfleur, the north-eastern point of the rectangle, forms a shallow bay, at the bottom of which are the roadsteads and town of Cherbourg. The roadstead is defended by a digue, or breakwater, having a small island at each end; that at the east end is called Poleize. Near Cherbourg the coast is high and abrupt. From Pointe Barfleur the coast runs southward in an irregular line to the mastury of the Douve and the Vire, which is full of shoals. This eastern coast is skirted above high-water-mark by a marshy flat a mile and a half wide, along which runs the roadstead of the sea by sandy-downs, and below high-water-mark by broad sands and rocks; it has opposite to it the small island of St. Marcouf.

The department has not any mountains, but a range of hills, some of them of considerable height, branching from the Armorician chain, extends through it from south to north. The principal streams flow from those heights eastward or westward into the sea, owing to the proximity of which all the watercourses are short.

The primitive Manchegos, who overran the greater part of the department, but a part of the eastern coast and of the country about Valognes, Carentan, and St. Lô is occupied by later formations. Between Carentan and Valognes the elevated tract behind the low marshes that skirt the shore is composed of a clastic sand and rock, belonging to the English inland. This lies closely resembles, in its fossil remains, that of the south of England; the white and blue strata are commonly much intermixed. The now red sandstone is abundant between Carentan and St. Lô; it is chiefly composed of red marl and red sandstone, in which the usual blue and white strata; between Carentan and Isigny it is yellowish mixed with red and grey, and is tolerably compact. Red marl and red sandstone belonging to this formation are found near Valognes and along the coast in mingled with the red sandstone and argillaceous sand. The formation, intermixed with quartz rock, on which in several places the new red-sandstone is found to rest. This quartz rock has in some parts been denuded; it is found between Valognes and Cherbourg alternating with argillaceous slate and the red sandstone. The red sandstone about St. Lô. Granite, resembling that of Dartmoor, is found at St. Vaast near Pointe Barfleur.

A bed of limestone, probably belonging to the supraarcæous, is quarried between Carenton and Valognes; and another limestone of uncertain date is found in the immediate vicinities of the latter place (G. Transact., 2nd series, vol. 1.)

The mineral treasures of the department are not great. There is one iron-works, having one furnace for making pig iron, and one for white iron, with only 3 blast-furnaces, but granite, slates, and stones for millstones and whetstones are quarried; kaolin and potters' earth are procured; and there are some mineral springs, and in the marshes considerable salterns.

The largest river is the Vire, which rises in the department of Orne, and enters this department on the east side nearly to Tessy, from whence it flows northward, just within and in one part on the boundary of the department, past St. Lô into the English Channel. It is about 50 miles, for about eight of which it is navigable. The Douve rises near the west coast of the peninsula of Cotentin, across which it flows in a winding channel to the eastward, until it falls into the same inlet or mastury as the Vire. Its whole length, through which it is navigable, the Mardaret and the Sève, small feeders of the Douve, about 12 miles long, are navigable, the first for about four miles, the second for about three;
and the Taute, another small feeder of the same river, 20 or 32 miles long, is navigable for about 14 or 15 miles. The Sinope and the Saire run into the sea on the east coast; the Divette, at Cherbourg on the north coast, and the Ay on the west coast: these are all small. The Sienne rises in the department of Calvados, which flows north-west into the sea; its length is about 38 or 40 miles, of which only five are navigable. Its principal feeder is the Soule, which flows by Coutances; the Airon and the Vene are smaller. In the south of the department are the Celune, or Selune and Sélune; the Selune is long, with five miles of navigable water; which rises in the south-eastern side of the department, and flows across it into the sea opposite Mont St. Michel, receiving in its course the Deron, the Brevon, and the Or; the Sée (28 to 30 miles long), which falls into the sea opposite the town of Coutances; the Ver Villemagne, of which only a small portion, including a navigation of five miles, belongs to the department.

The Terette and the Madelaine, two streams to which the government returns assign a navigation of four and five miles respectively, are so small as to be of no consequence. The quarries, in Bruge's map. The total amount of inland navigation is about 75 miles.

The eight, of departmental roads 23; together 31. The aggregate length of departmental roads was 360 miles, of which 201 were in repair and 159 out of repair. The principal road is that from the city of Cherbourg, which enters the department on the east at the village of Avrillé on the Vire, between Isigny (Calvados) and Carentan, and runs through Carentan, Sainte-Mère-Eglise, and Valognes. The road from Paris to St. Lo branches off from the foregoing at Bayeux (Calvados) and enters the department on the east at the village of Quentin on the Elle, a small feeder of the Vire, runs to St. Lo. The road from Paris to Avranches branches off from the Cherbourg road at Caen and runs through Villédieu. Roads run from St. Lo northward to Carentan; westward to Avranches; and southward to Villédieu, where it joins the road from Paris to Avranches. Roads run from Granville to Villédieu and to Avranches; and from Avranches to Porton- sonne, it is very small and of little importance. A road from Caen (Calvados) to Rennes (Ille et Breizh) crosses the southeastern corner of the department through Mortain and St. Hilaire. The by-road and paths amount to nearly 14,000, with an aggregate length of nearly 10,000 miles.

The arable land of the department comprehends nearly two-thirds of the whole soil; the corn grown exceeds the consumption of the department and the average produce of the departments of France, especially in buckwheat and barley, which is grown in quantity. The quantity of oats, rye, and maize or mixed corn raised is small. Flax and hemp are raised in great quantity. Pulse is good; the fruit is of middling quality. The quantity of ground occupied for orchards is perhaps greater than in any other department. The apple, pear, and cherry are grown in considerable quantity. The cereals, barley, and oats are raised to a less extent. The quantity of meadow-land is also very considerable, nearly one-sixth of the whole; the pastures are fine, and the cattle are of the finest breeds in France. The proportion of cows is great, and a large amount of butter is exported. The wool of Leicester breed is not of the very finest quality; it is considered that the long woolled Leicester breed might be introduced with great advantage. The rearing of swine, poultry, and bees are in some parts an object of great attention. There are no vineyards and but little woodland; the forest trees are chiefly oak, beech, and birch.

The department is divided into six arrondissements, as follows:

<table>
<thead>
<tr>
<th>Arrondissement</th>
<th>Population in 1846</th>
<th>Area in square miles</th>
<th>Commerce</th>
<th>Inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saint-Lô</td>
<td>St. Lô E.</td>
<td>99,250</td>
<td>100,017</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>Coutances</td>
<td>512</td>
<td>136,647</td>
<td>135,987</td>
</tr>
<tr>
<td>Valognes N.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>CHERBOURG</td>
<td>401</td>
<td>95,050</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>SÉMÉZIEUX</td>
<td>742</td>
<td>76,673</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td>MORTAIN</td>
<td>379</td>
<td>110,485</td>
<td>110,291</td>
</tr>
<tr>
<td></td>
<td></td>
<td>337</td>
<td>73,571</td>
<td>74,241</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,958</td>
<td>591,234</td>
<td>594,362</td>
</tr>
</tbody>
</table>

There are 49 cantons, or districts, each under the jurisdiction of a justice of the peace.

In the arrondissement of St. Lô are, St. Lô (pop. 14,830: 8,154 town, 8,241 whole commune); in 1856, 9066 communes [St. Lô and Stessy on the Vire, Thorgny, or Yerres (pop. 5012 town, 7186 whole commune) are near the country east of that river; Guilain, near the source of the Vene; Canisy and Marigny, near St. Lô; and Carentan, at the junction of the Taute and the Douze. Thorgny had formerly a fortress, built during the occupation of Normandy by the English, on the banks of which was erected a magnificent mansion, of which only one wing remains. Carentan (pop. 2292 town, 2773 whole commune), situated in a marshy and unhealthy district, is defended by ruined walls and defended by a strong castle. Trade is carried on in wool, flax, hemp, linnen, and salt, chiefly through the port of Cherbourg.

In the arrondissement of Coutances are, Coutances (pop. 1831, 8957; in 1836, 7663 for the commune) [Coutances] and Cerisy-la-Salle, on the Souleuvre; Hambye, or near the Vire; Montebourg, on the Vire; Gavray, or near the Vienne; Brehal, in the south-west of that river; Périera, near the Taute; Créancey and Lessart, on the Ay, the mouth of which forms a small harbour; La Haye-du-Puits, on the Houillabec, a small feeder of the Ois, on the Sée; Bricquebec, on the Vire; and Carentan. Cerisy-la-Salle has a manufacture of canvas, near Créancey and Lessart are considerable saltworks. The sailors of Agou, a village of 1500 inhabitants, at the mouth of the Sienne, which forms a small harbour, are engaged in the manufacture of canvas.

In the arrondissement of Valognes are, Valognes (pop. 1831, 6338 town, 6940 whole commune; in 1836, 6624 commune) (pop. Monteberg (pop. 2423 town, 2753 whole commune) - St.-Mère-Eglise, and Le Homme, on or near the Merse, is connected by a road with the Holyhead road, near the north edge of the commune, where it joins the road to Carentan. Cerisy-la-Salle has a manufacture of canvas, near Créancey and Lessart are considerable saltworks. The sailors of Agou, a village of 1500 inhabitants, at the mouth of the Sienne, which forms a small harbour, are engaged in the manufacture of canvas.

In the arrondissement of Cherbourg are, Cherbourg (pop. 1831, 18,377 town, 18,443 whole commune; in 1852, 20,315 whole commune) [CHERBOURG], on the sea at the mouth of the Divette; Lisieux, near the west coast; Le.evèque, on the east coast; Pointe de Glénan, on the north coast. The trade is carried on in linens, gloves, and paper. The manufacture of woolen-cloth, once flourishing, has gone to decay. There are a public library, a high-school, an agricultural society, and a poor-house or hospital, by the names of which the town is known. Cherbourg was founded in 1546.

In the arrondissement of Avranches are, Avranches (pop. 1831, 7000 town, 7269 whole commune; in 1856, 7464 commune) [AVRANCHES] and Breezy, on the Seine; Vincennes (pop. 7403 town, 7403 whole commune); Ville-Epin, on the Yerres; Landé, on the Airon; La Haye-Pesnel and Sarletty, in the country north of the Seine; Granville (pop. 3739) [GRANVILLE], Genet, and Poutonnet, on or near the west coast; Ducy, on the Celune; and Saint-James (pop. 1794, 1804 commune), on the Bevere, which flows into a grant of the territory in which it stands, made by Henry I. of England, duke of Normandy, to the Hospice of Jerusalem. The village, which rose on the possessions of
of the Hospitallers, called Theopolis, or God’s town (in French, Ville Dieu), grew to a town. It was a busy place; there are copper-foundries, brass and earthenware manufactories, and a hair-cloth manufactury. Leather and lace are made; the latter chiefly by women. Fontonio is on the Coueon, or Gooles, and two schools are maintained. The habitudes of trade in linen and lace. The latter, which is of excellent quality, is made in the hospital or poor-house, and affords employment and subsistence to a considerable number of poor. Saint-James is built on a hill, surrounded by villages; and the Saint-James priory, near the town, is of considerable importance. It is of uncertain origin; but the extent of the circuit of the walls, and the number of subterranean vaults which yet remain, show it to have been formerly a place of greater importance. It was repeatedly taken and retaken in the wars between the French and English powers. Several manufactures, and at the nine yearly fairs considerable business is done in linens, woollen stuffs, and thread.

In the arrendissement of Mortain are, Mortain (pop. in 1831, 1929 town; 2511 whole commune; in 1836, 2521 commune, 2290 hab.); and the Château de la Côte, the Rector of the Sées and the Colleges of Mortain. There is one of the most finely built tracts in the department. The only manufacture is that of earthenware. At St. Hilaire-du-Harcouet there is a college or high-school.

The population, where not otherwise specified, is that of the commune; and the registers of birth, death, and marriage, which are kept in a satisfactory state, are published annually. The manufactures of the department are woollen cloths, serge and other stuffs, linens, lace, cotton yarn and goods, haircloth, earthenware, glass, candles, ironmongers’ and other hard wares, common cutlery, paper, leather, and chemicals. The consumption of salt has been reduced from its great amount in the eighteenth century. The district of St. Martin-sur-Mer, which includes the town of St. Martin-sur-Mer and the Port du Petit-Rhan, is one of the most industrious in the department. The salt trade is very extensive. There are on the coast 165 lighthouses, which are kept in good repair, and the district has a considerable share in the export of salt to foreign countries. The export of salt from this district to France has increased very considerably since the appointment of a Board of Salt Commissioners in 1835. The export to England has also increased, and the trade is carried on by a number of vessels, which are employed in the trade. The salt is exported to England, and the country is thereby benefited. The amount of salt exported from this district to England is very large, and the trade is carried on by a number of vessels, which are employed in the trade. The salt is exported to England, and the country is thereby benefited. The amount of salt exported from this district to England is very large, and the trade is carried on by a number of vessels, which are employed in the trade. The salt is exported to England, and the country is thereby benefited. The amount of salt exported from this district to England is very large, and the trade is carried on by a number of vessels, which are employed in the trade. The salt is exported to England, and the country is thereby benefited.
of sending his coal from Worsley to Manchester at a small expense. [BRINDLEY.]

Manchester now possesses the means of water-communication with almost every part of the country. In the railroad enterprise Manchester has held a prominent station. It forms a junction for a considerable portion of the capital employed in the formation of the Manchester and Liverpool railway, the act for which was obtained in May, 1826; the road was completed by Midsummer, 1830, and formally opened on the 15th of September of the same year, in the presence of half a million. Along the original line of the road was formally opened on the 26th of May, 1838. Its length is ten miles, and its cost 650,000l. A continuation of the line to Preston and Lancaster is in progress. A dividend of 11 1/2 per share was declared on the 9th of January, 1839. The Grand Junction Railway was opened between Manchester with Birmingham and London: there are 10,918 shares in this railway, and the outlay was 1,512,150l.; it was opened in September, 1837, and has paid on the first year 104 per share, on the last six months 12l. The North Union which connects Manchester with Edinburgh and Haddington, is also in course of formation lines to Leeds, direct to Birmingham, to Sheffield, &c.

History.—Manchester, as its name shows (Man, castra), was a Roman station, the Manuciunum of the Antonine Itinerary, and the Castrum which was first called by the learned Whitaker to have taken its rise in the reign of Titus, and during the continuance of the Romans in this island it was indebted to them for many of the germs of civilization, and especially for an improvement in the woolen manufacture. The mule-jenny, which was introduced from Gaul before their invasion. Of the roads which were planned by Agricola, Manchester had four; two running from east to west, and two from north to south; inferior stations, at places now known as towns of Roydton, Prestwich, and Broughton, were connected with the Manchester camp. Under the Saxon Manchester became the abode of a Thane, who from his baronial hall dispensed a certain sort of justice, and furthered the improvement of the land. At an early period it had an abbot, of which, St. Michael's, is mentioned in Domesday Book. In 870 the Danes got possession of Manchester. After the Norman conquest William gave the place to William of Poetou. The third baron of Manchester was concerned in the capture of Caernarfon Castle, by the aid of the 1301 Thomas de Grelley granted the 'Great Charter of Manchester.' In 1307 the baron of Manchester was sum- moned to parliament, and appears to have been a favourite with Edward I., who made him Knight of the Bath. From the barony of the family of De la Warre, and John, the first of the line, was called to parliament in the ninth year of Edward II. He and his successors distinguished themselves in the battle of Cressy, during the Wars of the Roses, and most of all at the period of the Reformation. At an early period being one of those who apprised the pope that his continued resistance to Henry's wishes in regard to the divorce would lead to the extinction of his supremacy in England. At length the monarchical rights vested in the family of Mowbray of the house of Lancaster were extinguished.

The dissections excited by the Reformation were strongly experienced in this town. Collyer, the warden of the college church, refused to acknowledge the spiritual supremacy of Henry VIII., and many of the great families in the kingdom were attached to the see of Rome. In the civil wars Manchester ranged itself on the side of the parliament (Puritanism having gained an ascendency in it), and sustained a siege conducted by Lord Strange. On the cessation of the contest, Presbyterianism was restored, Edward Heyrick, the warden of the college church, being himself instrumental in bringing about the change. In 1646, when Lancashire was converted into an ecclesiastical province under the Presbyterian forms, Manchester, with some neighbouring places, was constituted the first classical division of the county. Under Cromwell the electors chose a representative in the person first of Mr. Charles Worsley, and then of Mr. R. Ratcliffe. The Act of Uniformity under Charles compelled about seventy ministers to quit their living in the town; among others, the Rev. H. Newcombe, who became minister of what is now called Cross-street church, and may be considered the father of non-conformity in a town which has from the first been distinguished as possessing a greater dissenting population than most other English towns. About this period feeling soon grew up, and the Rebellion of 1645 had many friends and supporters in Manchester, even among the leading inhabitants and the clergy of the collegiate church. Prince Charles himself was entertained in the town at the residence of Mr. Dunkirk of Backstreet, a house subsequently known as an inn, under the title of 'the Palace,' and which has recently been pulled down to give place to warehouses. It was not till 1783 that the town had a nightly watch, nor did it possess a Police Act before 1791. The population of the town rapidly increased. The extent of the town was rapidly increased by which great changes have been effected in the constitution of the country, displayed itself at a very early period in Manchester, and was supported and extended by means of Reform Clubs and 'Church and King Clubs.' In 1781 the town opened an invasion of British land, its period of invasion excited indignation and much warlike display. Immediately after the peace in 1815, the desire for Reform began to manifest itself in Manchester in a very decided manner. By the Reform Act Manchester obtained, in common with many other towns in the kingdom, the elective franchise.

Manufactures.—Cotton is the chief article employed in the manufactures of Manchester. Of late the spinning and weaving of silk have been introduced, and it has manufactures of woollen, small wares, hats, umbrellas, and of machinery, which last has risen to great importance and perfection.

The commercial spirit dates back to a very early period. It is enough here to mention, that in the time of Henry VIII. and Edward VI. the town was already to be considered as one of the chief manufacturing towns. The more rapid expansion of trade began in the seventeenth century, and one who is known as a benefactor to the town, Humphrey Chetham, was among its most ample benefactors. The enmities of the duke of Alba in the Netherlands, and subsequently the revolutions of the edict of Nantes, brought many enterprising and skilful foreigners into the district, and gave energy and effect to the native commercial impulse. At first the woollen was manufactured by the Jews and Huguenots, and the middle of the last century the cotton business had become one of the greatest of the country, which gave energy to the cotton manufacture was completed about 1780. Before their introduction—namely, until 1751—the importation of raw cotton into this country had gone on increasing slowly; the supply being in 1780 at 25,195l. From this year onwards the amount imported had increased to upwards of 6,700,000 lbs.; while in 1800 it reached 56,000,000 lbs. Equally striking is the official return of the export of cotton goods: in 1701 the value was 23,195l.; in 1800, 5,406,501/. Again, in 1838, the following goods according to Burn's 'Commercial and Statistical value of manufactured cotton goods exported':—

<table>
<thead>
<tr>
<th>Description</th>
<th>Value (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In manufactured goods</td>
<td>120,784,629</td>
</tr>
<tr>
<td></td>
<td>11,745,673</td>
</tr>
<tr>
<td>In thread</td>
<td>113,754,597</td>
</tr>
<tr>
<td></td>
<td>6,042,190</td>
</tr>
</tbody>
</table>

236,000,000 17,964,827

The value of the cotton trade to the country has been estimated at 34,000,000£ annually; the capital employed at 1,000,000l. per annum; and that 1,500,000 people depend on it for their subsistence. Till within the last two or three years, the progress has been steady and rapid; it is however easy to affirm that it will continue as satisfactory; at the moment we write...
MAN

(March, 1839), numerous mills in Manchester and the neighbourhoood have ceased working, in part or altogether.

The processes of throwing and weaving silk were extensively carried on at Macclesfield several years before they reached Manchester. The silk-mill of Mr. Vernon Royd, erected in 1819-20, was the first brought into operation in the latter town. Since then the trade has rapidly increased. In 1819 there were in it about a thousand weavers of mixed silk and cotton, and fifty of pure silk goods; in 1836 there were seven establishments, and, in consequence, the town has been doubled to twenty-two throwing-mills employing about four thousand persons. Printing is another branch of the silk business, chiefly, if not exclusively, carried on at Manchester. Dyeing of silk is also extensively pursued, and in fact the town is the only one in the kingdom where the exquisite blue of Oldham has been introduced.

Property in Manchester has greatly increased in value, and the habits of the manufacturers have undergone an entire change. It is curious to contrast the picture which Aikin gives with what is now seen in the stupendous warehouses and the vast array of palaces which are foci in Manchester and its vicinity. "An eminent manufacturer in that age (1695) used to be in his warehouse before six in the morning, accompanied by his children and apprentices. At seven they all came to breakfast, which consisted of one large dish of wafers-pottage, a little salt, boiled thick, and poured into a dish. At the side was a pan or basin of milk, and the master and apprentices, each with a wooden-spoon in his hand, without loss of time, dipped into the same dish and then into the milk-pans, and swallowed the whole. The work was very indifferently paid, for a man could earn it in small stores at the inn." In 1816 the annual value of property in the township of Manchester was 405,986£; in 1833 it had reached 373,085£. In the township of Ardwick property had in 1836 nearly doubled in the short space of ten years. Before this very many families resided in the town, but within a few years has been actually created through the erection of factories; in 1801 its population was 675, in 1831 20,569; in 1815 the annual value of property was 84,844£, and in 1835, 117,685£. Nor need there be any surprise felt at this when it is known that the whole manufacturing character requires an outlay of from 50,000£ to 100,000£. In the reign of William and Mary the taxable property in Manchester was rated at 4375£; in the year 1738 the amount of assessed taxes charged was 25,420£. The circulation of the branch bank of the Bank of England had in 1836 reached 500,000£, and was rising to 1,520,000£ in 1837, though in the interval several joint-stock banks had been established. In 1794 the poors' rate at five shillings in the pound produced 9270£, in 1834 it realised on a rate of half-a-crown 44,896£. In 1789 the annual value of the town was 31,428£, out of which 30,720£ was paid in postages 11,000£, being a larger amount than any other provincial town; in 1838 this sum had risen to 69,232£. In the single article of bricks the town paid to the excise in 1835 no less a sum than 42,770£.

Furthermore, the increase of land is of late date as well as in increase, as may be judged of by the following sales made of land in the central parts of the town: in 1834, 71 square yards in King Street were bought for 208£; 50 yards at the corner of Todd Street, for 500£; 250 yards in Smitty Door for 2000£; even 96, 10£, 12£, and yet higher prices have been given per square yard for land in situations eligible for those immense receptacles of goods, the larger warehouses. Land at the upper end of Market Street and Mosley Street, which 50 years ago was solitary, rises to 100£ per square yard annual rent, has been sold for 20£ a yard annual rent.

As to the intellectual and moral condition of the working classes, there has doubtless been great exaggeration, but it is equally true that in that condition there is much to deplore. The primitive cotton factories have put up the old domestic manufacture and thereby destroyed old domestic habits; it has also called from every district of the kingdom, and especially from Ireland (there are at least 50,000 Irish in Manchester), masses of people heterogeneous in their character, yet all more or less ignorant and uneducated, and not likely therefore to coalesce speedily into a compact form of civilised existence. Most of them have been much bettered in their circumstances without having found an equal increase of morally improving influences. Children by the amount of their wages have become inde-

pendent of their parents; girls have been sent into the mill before they learnt the rudiments of domestic duty, and mothers, whose presence in their own houses is indispensable, work for twelve hours in the day amid a mass of people. Young and old, with whom they have little or no connection, are in some instances letters that can scarcely be spared by parents.

It must also be said that the atmosphere of the factory is unnatural and consequently unhealthy, while the degree of heat tends to the premature development of the children. The effects of this is to be seen in the least beneficial consequence, to early, improper, and improper marriage of the girls. It is an evil that the factory owners have to bear, of being the scenes of violence and cruelty to children, of extortion against the men, as destructive alike of life and morality, may be considered as gross extravagances and cases of great hardship: but it is not the less true that neither their moral nor their physical atmosphere is favourable to the well-being of the workpeople; that, with some honourable exceptions, the masters are disregardful of the comforts and improvement of those whom they employ, and in exclusive of the wealth they can extract from them.

The system has not been sufficiently long in general operation to afford accurate means of judging of its effect on health and life. In 1823, the value of the annual sickness in the factories stood at 3,550£, and in 1830, at 5,000£; in 1831, the average sickness was 6,300£, and in 1832, at 6,400£. This increase is, therefore, in a considerable degree, due to the advantage in the earnings of their children, as in many instances, the relations of domestic life are subverted; the weak labour, the strong are idle, idleness begot vice, vice is the parent of discontent, and this leads to the use of intoxicating liquors, and the parent is moreover punished in the disobedience, if not insolence, which soon manifests itself on the part of the children, who are well aware how much the family depends on their earnings. Of 65,625 persons employed in mills, in May, 1833, 95 in outlying towns, 27,930 were above the age of 16 years, and 16,966 were below the age of 15. The following table gives the average weekly earnings of the different classes of operatives in the cotton factories of Manchester, Stockport, Dukinfield, Bury, and Oldham, as collected from the Returns of 151 mills, employing 48,654 persons, in May, 1833:

<table>
<thead>
<tr>
<th>Classification as respects age and sex.</th>
<th>Average weekly net earnings.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male and female adults, and children</td>
<td></td>
</tr>
<tr>
<td>Male adults</td>
<td>3 5</td>
</tr>
<tr>
<td>Principally male adults</td>
<td>2 6</td>
</tr>
<tr>
<td>Do. do.</td>
<td>4 0</td>
</tr>
<tr>
<td>Do. do.</td>
<td>5 4</td>
</tr>
<tr>
<td>Male adults</td>
<td>6 5</td>
</tr>
<tr>
<td>Male and female adults and children</td>
<td></td>
</tr>
<tr>
<td>Male adults</td>
<td>2 5</td>
</tr>
<tr>
<td>Principality of the former</td>
<td>9 2</td>
</tr>
<tr>
<td>Female adults</td>
<td>4 1</td>
</tr>
<tr>
<td>Male and female adults and non adults</td>
<td></td>
</tr>
<tr>
<td>Male adults</td>
<td>3 1</td>
</tr>
<tr>
<td>Female adults</td>
<td>1 8</td>
</tr>
<tr>
<td>Male and female adults and non adults</td>
<td></td>
</tr>
<tr>
<td>Male adults</td>
<td>2 8</td>
</tr>
<tr>
<td>Female adults</td>
<td>1 5</td>
</tr>
<tr>
<td>Male adults</td>
<td>2 2</td>
</tr>
<tr>
<td>Female adults</td>
<td>1 2</td>
</tr>
<tr>
<td>Male adults</td>
<td>2 0</td>
</tr>
<tr>
<td>Female adults</td>
<td>1 3</td>
</tr>
<tr>
<td>Male adults</td>
<td>1 8</td>
</tr>
<tr>
<td>Female adults</td>
<td>1 2</td>
</tr>
<tr>
<td>Male adults</td>
<td>2 0</td>
</tr>
<tr>
<td>Female adults</td>
<td>1 4</td>
</tr>
</tbody>
</table>

38 2

£
If this table were combined with the relative numbers of each description of the hands, it would afford the absolute average of their earnings, but it is beyond a doubt that the average is not less than 10 shillings a week each person, young and old. It will be noticed that the lowest wages are given to the scavengers and pie- sellers, who are generally young children. Out of a family of six persons there may be three, out of seven persons four employed at the factory, and when in a few years the children are become older, all may be so engaged. This will give for each of such families an average earning of 30s. or 40s. per week, when only three or four out of each family are employed, which would be amply sufficient to provide all the necessaries of life. The splendid gin-palaces, the numerous beer-houses in Manchester, is it not too obvious where the superfluous means of many go, and point out a source of demoralisation which is as frightful in its consequences as in its amount. But there are other signs which indicate anything but a want of means on the part of the great bulk of the population. The last Report of the Manchester and Salford District Provident Society shows that in 1837, though trade was not good, the amount received by its agents, who visit the houses of the work-people and inquire into the state of their affairs, was 47,294, while the Savings' Bank received within the year ending November, 1838, no less a sum than 109,123£.

The following tables will furnish the reader with the means of judging how much of this came immediately from the operatives:

### Classification of Depositors, November 20, 1838.

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tradesmen</td>
<td>2,568</td>
<td>17.7%</td>
</tr>
<tr>
<td>Shopkeepers</td>
<td>2,906</td>
<td>20.7%</td>
</tr>
<tr>
<td>Artificers</td>
<td>546</td>
<td>3.8%</td>
</tr>
<tr>
<td>Publicans</td>
<td>546</td>
<td>3.8%</td>
</tr>
<tr>
<td>Warehousemen</td>
<td>478</td>
<td>3.4%</td>
</tr>
<tr>
<td>Domestic servants</td>
<td>530</td>
<td>3.8%</td>
</tr>
<tr>
<td>Widows</td>
<td>997</td>
<td>7.1%</td>
</tr>
<tr>
<td>Minors</td>
<td>2,063</td>
<td>14.7%</td>
</tr>
<tr>
<td>Widowers</td>
<td>1,332</td>
<td>9.6%</td>
</tr>
<tr>
<td>Labourers</td>
<td>864</td>
<td>6.2%</td>
</tr>
<tr>
<td>Farmers</td>
<td>473</td>
<td>3.4%</td>
</tr>
<tr>
<td>Other</td>
<td>1,382</td>
<td>9.7%</td>
</tr>
<tr>
<td>Friendly societies</td>
<td>77</td>
<td>0.6%</td>
</tr>
<tr>
<td>Charitable societies</td>
<td>189</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

### Classification of Single Deposits, 1838.

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Class</td>
<td>11,616</td>
<td>32.4%</td>
</tr>
<tr>
<td>2nd Class</td>
<td>9,671</td>
<td>27.4%</td>
</tr>
<tr>
<td>3rd Class</td>
<td>7,292</td>
<td>21.1%</td>
</tr>
<tr>
<td>4th Class</td>
<td>5,061</td>
<td>14.4%</td>
</tr>
<tr>
<td>5th Class</td>
<td>1,143</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

The deposits shown as exceeding £20 since the eighth year, 1825, are new deposits, but transferred by gift, devise, or otherwise, from old accounts to new ones.

Not merely the factory hands, but generally all classes of working men have been in the receipt of wages sufficient, if well laid out, to procure all the necessaries and many of the comforts of life. Yet for want of the proper moral training, and by reason of the demoralising influence of Irish and other uneducated labourers, the abodes of a large proportion are wretched. Of 4,102 printed lists examined, the Manchester Statistical Society gave a Report in 1834, founded on personal inspection, 3,100 were houses, 722 cells, 250 rooms; of these there were comfortable 1,531, well furnished 689, not comfortable 2,531.

In that Society issued another Report of 28,186 dwellings examined.

**Persons occupying houses**
- 94,250
- 10,152
- 9,671

**Persons occupying cells**
- 14,274
- 1,338
- 1,263

Total number of persons resident in the dwellings examined: 129,232.

Of the 28,186 dwellings, 14,424 are reported as ill-furnished and 8,332 as not comfortable; thus only 72 per cent. of the houses of the working population of Manchester and Salford are comfortable. The Report adds, 'As in many (perhaps in the majority of cases) there are two beds to a family of five or six persons of both sexes, the inconveniences and evils which must result are obvious.'

The following is an extract from the Report for 1835 of the Manchester and Salford Town Mission, which, making allowance for the return of a true picture of the condition of many: 'Those who only visit occasionally the dwellings of the poor can have no idea of the state of ignorance, superstition, demoralisation, and indolence which exists. This is only to be discovered by those who visit them constantly and regularly, as our missionaries do. Scenes most disgusting and blasphemous at which the mind shudders are patiently borne and fearlessly met by the agency we employ. They (the town missionaries) have been stoned, threatened with death, surrounded with masts, seriously bruised, and more than once they have narrowly escaped with their lives. And this in Manchester! Can it be supposed that the Christian public will suffer the state of things to exist without making a strenuous effort at once for the safety of the case? Surely homesickness at home should not be neglected.'

**Schools and Scientific Institutions.**
- The education hitherto afforded to the working classes in Manchester has been very defective both in extent and quality. From the Report from the Select Committee on the Education of the Poorer Classes, printed in 1838, much valuable information may be obtained. The Committee decided that daily education ought to be provided for one in eight of the population of a large town, and report that in Manchester only one in thirty-five is receiving an education likely to be useful. The number of children of the working class stated to be at daily schools in the town are—at very different day and dame schools 11,336; other better schools, 2569; total 17,105, on a population estimated at 250,000; number including Sunday schools under the Established Church 10,254, under Dissenters 19,032, Catholics 3812: respecting Sunday-schools the committee remark, 'They consider the instruction given as of great advantage, by implanting feelings of religion and giving habits of order, at least inculcating a respect for daily instruction also;' an opinion which will be thought not unfavourable by those who have personal experience of the workings, and therefore of the deficiencies, of these useful makeshifts, especially when they take into account brought to light by Mr. J. Bentinck by a personal examination, that in Manchester and Salford 11,913
and 11,479 scholars come too late to school, and this in the case of instruction where, the same authority informs us, the following is on the average the full time employed each Sabbath, that is, each week, namely, in reading about one hour and fifty minutes; in singing, fourteen minutes and twenty-one seconds; in praying, one minute and sixteen seconds; in drawing, one hour and two hours and a quarter. The educational clauses in the last Factory Act have been of but small advantage. Dr. Kay stated before the Education Committee of 1836, that one cause of failure was that no means were given in the Act compelling the employers to two hours and a quarter.

Mr. Ashworth stated from his own experience, 'If the manufacturer is desirous to make the most of the two hours, and give the children education, he may do some service in it, but a compulsory education affords him at the same time not only a very cheap but also a very good means of profit, and is very obnoxious to the employer, and, I think, generally people laugh at it; it is almost good for nothing.' In the Report of Mr. L. Horner on these clauses (Feb., 1839), it is said—"Some parents appreciate the advantage of the education, but there is not at all an attempt at the schools, and prefer their children working full time and earning a full rate of wages." Under these circumstances it is easy to infer what good factory education confers. Indeed, Mr. Horner reports not more than eight mills in Manchester where illumination has been best observed, which "best" are the only inferior to the primary education ought to be; and it embraces only 332 boys and 177 girls. The school of Messrs. M'Connell he considers worthy of special notice, and deserving of being held up as an example not at all an unusual. There are no certificates of (education) presented to us subscribed by the teacher with his or her mark. In the last quarter I had a school voucher presented to me with a mark, and when I called on the schoolmaster to read it before he could not; I have had to reject the school voucher of the fireman (for the steam-engine), the children having been schooled in the coal-hole—in one case I actually found them there; it occurred at factories where a large capital must be employed.

During the diffusion of literary and the operation of institutions where educational instruction are done something is done to educate adults and youths, while the existence of a few good schools in Manchester for the children of the working classes will serve as models. In this way the Manchester Society for Promoting National Education has rendered a great service to the town. It has at present over 1,600 of 500. Lectures on various topics are given by men of eminence. There is a French class, an Italian class, an Amateur Musical Society, an Essay and Discussion Society; and concerts are occasionally given, which are well attended. Connected with this is a good library, a coffee-room, and a well-supplied news-room. Its expenditure is above 2,000£ annually; James Heywood, Esq., is the president. The Mechanics' Institution, in Cooper Street, the Mechanics' Institution in Miles Platting, the Accrington Lyceum, the Chorlton Lyceum, and the Parthenon. The Accrington is designed for the benefit chiefly of clerks and other upper servants connected with the trade of the town. The experiment has been very successful. The number of subscribers for the Manchester (1836) is 3,096, and 500. Lectures on various topics are given by men of eminence. There is a French class, an Italian class, an Amateur Musical Society, an Essay and Discussion Society; and concerts are occasionally given, which are well attended. Connected with this is a good library, a coffee-room, and a well-supplied news-room. Its expenditure is above 2,000£ annually; James Heywood, Esq., is the president. The Mechanics' Institution, in Cooper Street, under the presidency of Mr. B. Heywood, is the model of a class below whom reference has been made. The disbursements of the Institution during 1838 were $217,697. The original cost of the building was $7,004£, but as the institution had its resources mainly absorbed in defraying the additional charges, this sum has been rendered more burdensome by arrears of interest at 5% and, deducting dividends paid, a balance is still due of $819,547, to pay off which an effort is being made which gives promise of success. The number of subscribers on the 25th of December last was 1,186, of whom 51 were under fourteen years of age, and 466 between fourteen and twenty-one. Sixty-five lectures were delivered during the last year, and were attended by 20,650 males, and 4800 females. Two concerts were also given. There are 5923 volumes in the library; the library of books of reference, the last year amounted to $2,451. The number of members in the respective classes were:

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grammar</td>
<td>128</td>
</tr>
<tr>
<td>German language</td>
<td>8</td>
</tr>
<tr>
<td>Arithmetic</td>
<td>154</td>
</tr>
<tr>
<td>Education</td>
<td>28</td>
</tr>
<tr>
<td>Mechanical drawing</td>
<td>64</td>
</tr>
<tr>
<td>Landscape</td>
<td>24</td>
</tr>
<tr>
<td>Music</td>
<td>32</td>
</tr>
<tr>
<td>Mathematics</td>
<td>18</td>
</tr>
<tr>
<td>Literature</td>
<td>50</td>
</tr>
<tr>
<td>Natural history</td>
<td>7</td>
</tr>
<tr>
<td>Natural history, &amp;c.</td>
<td>7</td>
</tr>
<tr>
<td>Artistic</td>
<td>6</td>
</tr>
<tr>
<td>Professional men</td>
<td>6</td>
</tr>
<tr>
<td>Schoolmasters</td>
<td>10</td>
</tr>
<tr>
<td>Shopkeepers and assistants</td>
<td>87</td>
</tr>
<tr>
<td>No profession</td>
<td>11</td>
</tr>
<tr>
<td>Ladies</td>
<td>17</td>
</tr>
<tr>
<td>Youths</td>
<td>173</td>
</tr>
</tbody>
</table>

The knowledge of this fact, combined with a wish to reach the operative classes, has led to the establishment of the Lyceums in Ancoats and in Chorlton-on-Medlock, as well as of the Parthenon; and if we may judge from the first Report of that at Ancoats, which has just been issued, it is reasonable to hope that these institutions will confer immediate benefit on those who are employed in the factories and on other handicrafts. The subscription is only two shillings a quarter, for which lectures, a library and reading-room, a selection of newspapers, education in classes, and other means of improvement, are provided. The education of females is made a prominent object. The news and reading rooms were opened on the 11th of October, 1838. From the library the average number of deliveries is 120 each evening. There are now on the books 2,462 members, of whom 246 are below twenty-one years of age; the 715 ordinary members are thus classified:

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manuals</td>
<td>10</td>
</tr>
<tr>
<td>Professional men</td>
<td>4</td>
</tr>
<tr>
<td>Schoolmasters</td>
<td>6</td>
</tr>
<tr>
<td>Shopkeepers, master-tradesmen, and their assistants</td>
<td>87</td>
</tr>
<tr>
<td>Warehousemen and bookkeepers</td>
<td>132</td>
</tr>
<tr>
<td>Mechanics, millwrights, engineers, moulder, and smiths</td>
<td>37</td>
</tr>
<tr>
<td>Engravers and pattern-designers</td>
<td>37</td>
</tr>
<tr>
<td>Spinners, weavers, and other mill-hands</td>
<td>102</td>
</tr>
<tr>
<td>Other trades connected with the manufactures of the town, as dyers, calico-printers, fustian-cutters, &amp;c.</td>
<td>29</td>
</tr>
<tr>
<td>Building trades</td>
<td>37</td>
</tr>
<tr>
<td>Sundry handicraft trades</td>
<td>85</td>
</tr>
<tr>
<td>No profession</td>
<td>7</td>
</tr>
<tr>
<td>School-boys</td>
<td>11</td>
</tr>
<tr>
<td>Females</td>
<td>57</td>
</tr>
</tbody>
</table>

The Manchester Free Grammar-School was founded by Hugh Oldham, bishop of Exeter. The foundation deed, bearing date 26th August, 1515, states the cause which induced the founder to be that the youth, particularly in the county of Lancaster, had for a long time been in want of instruction, as well as on account of the poverty of their...
parents as for want of some person who should instruct them. And one of the fundamental requirements is, 'The high-master for the time being shall always appoint one of his scholars to instruct and teach in the one end of the school all infants that shall come there to learn their A B C, primer, and... till they begin to get hard.' The quotations show that the school was designed to furnish elementary as well as grammatical teaching to the poor and those in need of instruction. The income of this school is now above 3000l. a year; and though its operations have been extended under the influence of Chancery, and though the masters receive handsome salaries, the outlay must still leave an annual surplus. The instruction given comprehends the mathematics, the English and French, as well as the Greek and Latin languages; but the school is far from being a good which might produce, and cannot be considered as administered in a manner conformable to the donor's intention.

Chetham's Hospital, or The College, was founded by charter 1665. Humphrey Chetham being the benefactor, who, having distinguished himself in life and brought up fourteen boys of Manchester and Salford, and of Droylsden, ordered in his will that the number should be augmented by the addition of one from Droylsden, two from Crumpsall, four from Turton, and ten from Bolton, leaving the interest of 7000l. for their maintenance, under the direction of fourteen years, at which time they were to be put out to some trade. The scholars are instructed in reading, writing, grammar, and arithmetic. They are clothed, fed, boarded, and lodged. The school is conducted in a convenient old building, which is proposed to be reconstructed. There are in the collection of books not less than 25,000 volumes, which have been accumulated out of the benefactions of the same H. Chetham: among the books are many rare and most valuable works. The library is open to the use of the public; books are not allowed to be taken away, but a list of readings is provided. At present the good which this library does is but small, the delivery of books to readers not amounting to an average of twenty per day, a circumstance which may be explained by the fact of the library being only open at hours during the day when most persons are engaged.

Among the scientific institutions of the town, the Literary and Philosophical Society stands first in point of time (founded 1781). It has numbered among its members distinguished natives of the vicinity, and many other persons of high reputation; its utility has been fully proved by the publication of its Transactions. The Royal Manchester Institution for the promotion of Literature, Science, and the Arts, formed mainly under the auspices of G. W. Russell, has been of service in furthering the diffusion of knowledge. Several public meetings have been laid out in the erection of the building. The Manchester Museum, or Natural History Society, which has a handsome hall in Peter Street, ranks among the most useful and interesting institutions of the town, and offers to the public a collection of objects in nature with which few similar establishments can enter into comparison. The council is empowered to open the museum to ladies, strangers, resident non-subscribers, schools, and the working classes.

In all public estimates, Manchester is placed on public estimate, having been the first provincial town to provide a good elementary medical education; and in its numerous and well-conducted medical institutions it possesses very superior advantages. The Infirmary is a school in itself. During the year 1837, the expenses of the house, from June, 1837, to June, 1838, it treated no less than 20,760 patients; and since its foundation, 1752, it has extended its benefits to 629,348 cases. There were in the house and on the books, June 24th, 1838, 1317 invalids. Of the cases treated in 1834, 8125, 2813 were of cases of accident. Messrs. Jordan and Turner have the honour of having taken the lead in the foundation of the medical schools, the one situated in Marsden Street, the other in Pine Street, in which about 140 pupils are conducted by able practitioners of medicine. An institution of medical education. Manchester has also the advantage of possessing an admirable botanical garden, zoological gardens (recently opened, and offering much promise), a school of design, an architectural society, concert hall, choral society, &c.

Charitable Institutions.—These are too numerous to allow of more than a bare mention of some which are the most useful. The School for the Deaf and Dumb was founded in the year 1825. A new and handsome building for it has just been opened, situated near the botanical gardens, on the Stretford road, a part of which will be appropriated to a benevolent asylum also, under the will of Mr. Kershaw of Oldham who bequeathed 20,000l. to be applied to the maintenance of ten boys in a house to be built and furnished with suitable apartments. The Jubilee, or Ladies' Female Charity School, founded in 1806, is conducted in the house in Ducie-road, and educates forty girls for the duties of domestic service. The Manchester and Salford District Provident Society is designed, it is said, to a special effect for the purpose of giving instruction to the poor. The influence which the trust (Bost), under the auspices of Dr. Tuckerman of that city, had given, the society sends forth visitors into all parts of the town (most of them are gratuitous labourers), to visit the sick and indigent residents, to encourage them by sympathy, and receive their little savings in order to deposit them in the society's bank. For this purpose the town is divided into districts and societies, in all 191, of which however 236 only are supplied with teachers. Their mendicity department effects little good. Three thousand cases were examined by its stipendiary visitors in 1843, whereas 1285 received tickets to the various medical societies, 741 were referred to the relief board of the society, and 47 were found to be cases in which the society could not render assistance. It is said that there are in Manchester 690 persons of which number 494 were reported as unworthy, a powerful argument against indiscriminate alms-giving. Work was found for 14 persons, and 98 new cases of gross improvidence were detected and exposed. The ministry to the poor, when the society is well conducted, is in many cases of a similar character is the Town Mission, whose motto is, 'Not to proselyte, but to evangelise.' Its expenditure during the last year was 1131l., and the following are among its instances of usefulness. A young gentleman engaged in trade. About twenty thousand eight hundred and thirty-seven hours have been spent by our missionaries in promoting the above objects. They have held eleven hundred and eighty-one meetings. They have paid forty-three thousand three hundred and sixty-seven visits; have lent sixty-four Bibles, thirty-three Testaments, and distributed in their districts sixty three thousand one hundred and sixty-two religious tracts. It is estimated that the number of individuals now under their care are at least sixty thousand. The number of visits paid by the society during the year 1830, was 9816, and the number of families visited 3992. At present it occupies forty-two districts under a superintending missionary and three assistants. These districts contain from five to eight hundred families; about one-fifth of whom reside in cellars, and more than three-tenths of whom have the benefit of visits on the part of any place of worship. In several of the districts there are not quite twenty families for each house that is licensed for the sale of strong drink; and many of the districts have no place of worship of any kind save as which the missionaries hold their meetings. It is a fact well ascertained, that in many districts there are nearly so many reputed brothels as there are houses for the sale of strong drink.

Manchester, 1835.
in Manchester, each of which has an officiating minister, one in Rusholme Lane, another at Ardwick, and the third at Collyhurst.

Eminent Persons.—Hugh Oldham, bishop of Exeter; John Bradford, put to death by Mary for heresy; Doctor John Dee, the alchemist; John Milton and those of his time on which he has conferred signal benefits. Crabtree, a native, ought also to be mentioned. [Crabtree, William.]

(Communication from Manchester. For further information see Whitaker's History of Manchester; Aikin's Lexicon, containing thirty to forty miles round Manchester; Wheeler's History, Antient and Modern, of Manchester; Reports, &c.)

MANCHINEEL TREE. [Hippomane Mancanilla.]

MANCIPIUM, MANCIPATIO. The right appropriated by those Roman authors. The following is the description of Mancipatio by Gaius (i. 119, &c.):—"Mancipatio is a kind of imaginary sale, and is a peculiar privilege of Roman citizens. It is effectuated in the following manner:—There must be a sale of most considerations, Roman citizens, of full age, and also another person, of the same class and condition, to hold the brazen scales, who is called libripens. The person who receives in mancipio, taking hold of the thing, says, "I affirm that this is my property, and I have purchased this with this money (es) and these brazen scales." He then strikes the scales with the piece of money, and gives it to him from whom he receives in mancipio as the price. In this manner both slaves and free persons are mancipated, as well as animals, which belong to the class of things mancipii, or mancipi, such as oxen, horses, mules, asses; lands also (præsia), as well in the city as in the country, which are of the class mancipii, such as are the Italian lands, are easements. And the magistrates, as the hypothesis differs from that of other things in this respect only, that persons, whether free or slaves, cannot be mancipated unless they are present, it being necessary that he who receives in mancipio should take hold of that which is given him in mancipio, whereas in case of the term mancipatio, signifying that the thing is taken (capitur) by the hand (manu); but it is the practice to mancipate lands which are at a distance."

In this passage Gaius describes generally what 'mancipio' is by implication, what things admit of 'mancipatio,' or, in other words, what things are 'mancipi.' He was led to these remarks by that part of the subject-matter of his text which treats of the rights of persons, or status; and he prefàces his description of 'mancipatio' by stating the case of a woman, whose husband and wife were in particular relation to her husband, when she is said in manu viri esse [Marriage], are things mancipi, and may be mancipated in the same way as slaves.

EMANCIPATION. All things, as subjects of ownership, were either res mancipi or res nec mancipi: and there is, observes Gaius (ii. 18, &c.), 'a great difference between things 'mancipi' and things 'nec mancipi.' The latter can be alienated by being transferred from one to another, the one to whom the property is passed thereby being entitled to be called his owner, if are transferred corporeal, and therefore susceptible of delivery. Thus the property in a garment, gold, or silver, may be transferred by bare tradition. Lands in the provinces could be transferred in the same way. Thus 'mancipatio' was the proper term for expressing the transfer of things 'nec mancipi.'

(Ulpian, Prag, tit. 19.)

It appears then that the ownership of property generally which belonged to that class of things called 'res mancipi' is sur traditio, or, as this term is usually rendered, 'successio.' The 'nec mancipi,' on the other hand, is transferred by 'mancipatio.' The foundation of the distinction as to ownership between the two classes of things, whether land or personal property, was that the ownership of the former was in the Roman people, in which case the lands were called Stipendiaria; or in the reigning Caesar, in which case they were called Tributaria. There was therefore no ownership, properly so called, of lands in the provinces by individuals; at least no ownership in the sense in which lands in Italy were held. Lands in Italy held by individuals in full or Quiritarian ownership could be the subjects of usucaption, in jure cession, mancipatio, and vindicatio: lands in the provinces could not, unless individually acquired. Certainly all the conquered lands even in Italy were Agri Publici, the property of the state, and so long as they remained in that condition, nothing beyond the use (usu fructus) and occupation of them (Posseession) could be in private individuals. Much of the Ager Publicus in consequence of this, belonged to citizens in full ownership, and accordingly it would become 'mancipi' and subject to the same rule as to alienation as other lands held in Quiritian ownership.

Mancipatio could only take place between Roman citizens and the Latins who were called in Latinus Unius Aegum, who enjoyed the Commerium, or privilege of buying and selling. As the effect of Mancipatio was to transfer Quiritarian ownership with its accessory rights of usucapion, in jure ceseion, mancipatio, and vindicatio, the reason of the rule would be obvious. The form of mancipatio was in some respects a disadvantage, inasmuch as without observing the formalities required by the law, the legal property in a thing 'mancipi' could not pass. The mancipatio was that form of transfer which we find similar examples in the early history of the Laws of the Fasti, which governed the transfer of the thing transferred. No writing being required, it was necessary that there should be some evidence of the transfer, and such evidence was secured by the mode of transfer which the law required. So far as relates to land, mancipatio in its various forms, were the engine by which the transfer of land was from the individual to the state in its capacity of the land or the man's honor. This form was in effect and was called 'lexis actio.' (Gaius, ii. 24.) Its great resemblance to the fictitious suit formerly in use in our own system, called a Fine, might lead to the conjecture that the notion of a Fine was taken by the early practitioners in our courts from this Roman law; and this hypothesis is exceedingly probable will be the more apparent, the further any person examines into the connection between the early English and the Roman Law. The term in jure cesso is a fictitious action before a competent manum of the land at Rome, or a prætor, or before a preses in a province. The purchaser claimed the thing as his, and the seller either acknowledged his claim or made no defence, upon which the judge decided in his favour, and the thing passed. This form was in effect and was called 'legis actio.' (Gaius, ii. 24.)

Easements (jura priorum, otherwise called servitudes) could be transferred in the case of lands in the city only by the cessio in jure; but in the case of lands in the country, also by mancipatio. But this observation applies only to Italian lands; in the provinces, rights of this description, are right of road, of conveying water, &c., were matter of contract.

Some difficulty has arisen from the use of the word nixum, or nexus, in connection with mancipation. 'Nexum' is the modern term of usucaption, and the word is used in the same sense as the Roman 'mancipatio,' which is the original. Hence it may signify the engagement or contract. Thus in the laws of the Twelve Tables, in the words, 'quum nexum faciet mancipumque, nexum may signify the contract. Cicero (Topica, 5) defines Abaleniatio to be 'eius re quæ nexum est, sui traditio est, sui cessio est, et traditio suæ, quæ dicuntur quæ sui et sui esse sui ut posse est, quæ est sui et sui esse sui usus et librum.' This is the meaning of the term 'nexum' in this case. In case of the 'mancipatio,' or, as a more general term, must contain the mancipatio; for the mancipatio does not contain the nexum. This would be consistent with Varro (De Ling. Lat., 5) quoting Manius, who says that everything is 'nexum' which is transferred per manum; and in the words 'nexum et librum,' which includes mancipium: but he adds that M. Scævola considered 'nexum' to be everything transferred per manum, et librum, so as to be thereby bound, except things which were transferred by mancipatio. Thus
the definition of Secovla would exclude 'mancipatio' from the 'nexum,' but would include a testamentary disposition, inasmuch as that also was made per as et libram (Gaus, ii. 1631), and it would also include that form of marriage called coempsio. But if Secovla is right, and this has hard been doubted, the word is wrong in the case of 'nexum,' in the passage quoted. In the 'Orator' (i. 39) he mentions both 'nexa' and 'mancipia' in his enumeration of the various subjects brought before the Centumvir. Assuming Secovla's definition to be correct, Gaius has properly translated 'nexum' from 'mancipium' in the passage in the 'Orator;' and have used 'nexa' with some inaccuracy in the passage from the 'Topica.'

MANCO CAPAC. [Franc.

MANDAMUS. [Franc.

MANDAMUS is a writ by which the court of king's bench, in the name of the reigning king or queen, commands the party to whom it is addressed to do some act in the performance of which the prosecutor, or person who applies for or sues the writ, has a legal interest; that is, nor merely such an interest as would be recognised in a court of equity or in a court of ecclesiastical jurisdiction, but an interest cognizable in a court of common law; the right must also be one for the enforcing of which the prosecutor has a legal remedy, and in order to get such a remedy, a copy of the writ can transfer or alien his customary tenement or estate [COPPIOLD] in no other manner than by surrendering it into the hands of the lord of the manor to the use of the purchaser or surrenderor. The writ of mandamus is the common-law method of the right of the surrenderor to call upon the lord for a grant or admittance, and the court of king's bench therefore left the party to seek his remedy in a court of equity, and would not interfere by granting a mandamus. The object of the writ is that the court, by a mandamus, admit the surrenderor is not merely an equitable liability, because this mode of transferring property of this nature is founded upon ancient custom, and rights dependent upon custom are matters of common-law cognizance. Of late years the court of king's bench appears to have taken this view of the subject, and has awarded writs of mandamus in all cases where the lord has refused to admit the party to whose use a surrender of the copyhold has been made. Again, the duty of parishioners to assemble in vestry for parochial purposes, they objects of a temporal or spiritual nature, is a common-law duty, and a mandamus will be granted to compel the parishioners to meet. But when they are met, the power of the court to interfere further by mandamus depends upon the nature of the act which the parties object to, whether it has to do with statute or with execution, the purchase of books or vestments necessary for divine service, or the making provision for the repairs of the fabric of the church (deleg-

MANDarin Duck. [Duck, vol. i., p. 185.

MANDARINS is the general name of the officers of state in China. They are chosen from the men of lea- or scholars from every part of the empire, having obtained their degrees and passed their examinations, by their names inscribed in a register kept by a court or board established for this purpose. When an office in the administration is vacant, the court presents to the emperor the list of those to whom the office is to be assigned, and foremost of these is the man on whom the monarch appoints one to fill up the vacancy. Sometimes when there are several candidates equally qualified they draw lots for the vacant office. In DuBun there were 13,600 mandarins all over the empire, among whom the secretaries of the emperor, the councilors of the emperors, and grand councilors or cabinet ministers. The governors of provinces rank in the second class. The secretaries of the treasurers, the governors of cities to the fourth class, and so on. Each order has its distinctive mark of dignity; the highest order wear a peacock's feather at the back of their capes. A gratification and strict subordination among them.

M AN 377

MANDELSLO. [Oleander.] MANDEVILLE, SIR JOHN DE, was born at St.
Albans, about the year 1300. He was descended from a family of
 distinction, and appears to have received a better
education than was usual in those times. He studied
mathematics, theology, and medicine, and for some years
pursued the studies of letters. In 1295 he left England,
and passed through France, and proceeded to Palestine,
where he joined the army of the infidels. He afterwards
served in Egypt under the sultan, and in Southern China
under the khan of Cathay. He resided for three years at
the city of Peking, then called Cambalu, and afterwards
travelled over a large part of Asia. After an absence of
about thirty-three years, he returned to England, and wrote
a narrative of his travels, which he dedicated to Edward III.
He died on the 17th of November, 1372, at Lyme, where
he was buried.

His work contained details more ample and minute than
any which had previously appeared concerning Palestine,
Egypt, and parts of India and China, and must for some
centuries have been an extremely interesting work. To
and was published in 1618, it seems to have borrowed un-
ceremoniously from previous writers; it inserted parts of
such chronicles as were then in existence, and introduced
romantic tales of knight-errantry, miraculous legends,
many of which were of very ancient date. Probably some of the most
absurd parts of the work have been added or improved
upon by the contemporary copyists.

His reputation as a traveller was very high in his own age.
Beside a Latin version of his work, translations of it
appeared in many languages, including Italian, French, Spanish, and German.
A M.S. of Sir John Mandeville's travels, which belongs to the age of the
author, is in the Cottonian Collection in the British Museum
(Titus, C. xvi.). The first English edition was printed by
Wynkyn de Worde, at Westminster, 4to, 1499: "A lytell
TREATISE or Booke, named John Mandevyl, Knight, born in
Englande, in the towne of Saunt Abone, and speaketh
of the wayes of the holy Lande toward Jerusaleme, and of
Marvyles of Ynde and other diverse Countreys. The best
English versioon, is appended to the "Travels of Sir John Mandevyl, &c.
Perhaps the first printed edition was that of Pietro de Cernoro, Milan,
1496, 4to: 'Trattato delle più maravigliose cose e più notabili
che si trovano in le parti del mondo vedute, ... del Cavalier
Johanne da Manuilingo.'

(Bing. Univ.; Wat's Biblioth. Brit.; Manuel de Li-
brare.)

MANDEVILLE, BERNARD DE, was born at Dort,
in Holland, somewhere about the year 1670. He was
worked hard in the law, yet he seems to have had much
success as a physician; but his writings assisted him
in gaining him considerable notoriety. His first work was
'The Virgin Unmasked, or Female Dialogues betwixt an
elderly maiden Lady and her Niece on several diverging
Discourses on Love, Marriage, Memoirs, and Morals, &c.,
and it is a work on a constantly subject,
written in a coarse style. In 1714 Mandeville published a short
poem, called 'The Grumbling Hive, or
Knaves turned Honest,' to which he afterwards added long
explanatory notes. In some of these he alludes to the 'Fable of the Bees.'
This work, which is
of an altogether superior character to the 'Virgin Un-
masked,' and which, however erroneous may be its views of
morals and of society, is written in a proper style, and bears
the stamp of the true statesman. His plan is a mean of
diminishing immorality, and that he endeavoured, so far as
lay in his power, by affixing a high price and in other ways,
to prevent the work from having a general circulation.

P. C. No. 998.

Mandeville wrote also at this time a paper called the
"London Journal," which shared with the "Fable of the
Bees" the censure of the Middlesex grand-jury. He sub-
sequently published a second part of the "Fable of the
Bees," and several other works, among which are two,"en-
titled 'Free Thoughts on Religion, the Church, and Na-
tional Happiness,' and 'An Essay on Honour and the
Usefulness of Christianity in War.' We are told by Sir John Hawkins, in his 'Life of Dr. Johnson,'
that Mandeville was partly supported by a pension from
some Dutch merchants, and that he was much patronised
by the first Earl of Sandwich, at whose table he was a
frequent guest. He died on the 21st of January, 1733,
in his sixty-third year.

The 'Fable of the Bees, or Private Vices Public Benefits,'
may be viewed in two ways, as a satire on men and as a
theory of society. As a satire, it assumes human nature to
be base, and it is sufficiently just and pleasant; but viewed in its
more ambitious character of a theory of society, it is alto-
gerther worthless. It is Mandeville's object to show that
national greatness depends on the prevalence of fraud and
luxury, and for this purpose he supposes a 'society of
bees,' possessing in all respects institutions similar to those
of men; he details the various frauds, similar to those
among men, practised by bees one upon another in various
ways; he shows that some of these are means of making
wealth; and, having already assumed that wealth cannot
be obtained without fraud and cannot exist without luxury,
he proceeds to explain the superiority of national greatness.
His hive of bees having thus become wealthy and great, he afterwards supposes a mutual
jealousy of frauds to arise, and fraud to be by common
consent dismissed; and he again assumes that wealth and
luxury immediately disappear, and that the grandeur of
the society is gone. It is needless to point out inconsistencies
and errors, such for instance as the absence of all distinc-
tion between luxury and vice, when the whole theory rests
upon obviously false assumption; and the long disserta-
tion, however amusing and full of valuable remarks, contain no
attempts to establish by proof the fundamental points of the theory.

In an 'Enquiry into the Origin of Moral Distinctions,'
contained in the 'Fable of the Bees,' Mandeville contends
that virtue and vice are what are most apt to
influence the feelings of others, and that the foundation of moral
dis approbation, have been created in men by their
several governments, for the purpose of maintaining society
and preserving their own power. Incredible as it seems
that such a proposition as this should be seriously put forth,
and it is not; for Mandeville supposed that virtue is the
always was, however strange the way in which he set about it,
to promote good morals; for there is nothing in
Mandeville's writings to warrant the belief that he sought to
encourage vice.

MANDINGOES, a negro nation inhabiting the
country on the banks of the rivers Senegal and Gambia, and
which extends farther eastward along the upper course of
the Gambia or Quorra. This country occupies the northern
density of the mountain-region, which extends between
the Gulf of Guinea and the great desert of the Sahara, and
which goes under the name of Kong. [Kono] The
Mandingoes constitute a considerable portion of the population
of most of the small kingdoms which occupy that extensive
region, and form the most important people of the whole west of Taffara and Iabbi on the Gambia, and
found that it was understood as far west as Pisania on the Gambia, and
even to Janjan-Buta or MacCarthy's Island (13° 33' N. lat.
14° 43' W. long.)

The Mandingoes are distinguished among the negro
tribes by their stature and some other characteristic
features. They are generally above the middling height
and strong, and capable of enduring great labour.
Their features are regular, their nose rather prominent,
their complexion is more or less freckled. Their hair is
thicker as in other negro tribes, but their hair is woolly.
Their colour is a good clear black, inclining to yellow.
Golbery thinks that the Mandingoes and the Foolsah, in the

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mandingoes in their writing use the same charac-
ters, and are Moamahmdians; but Godbery thinks that
they have retained many of the usages of Jeshick as practised
on the coast of Guinea by the negroes. As their language is
so widely spread over the western countries of Africa, Mr.
R. Maxwell Macbrair, who is agent to the Wesleyan Mission,
seems to have given good reason for lately publishing a
grammar and vocabulary of this tongue. The Gospel of
St. Matthew has also been recently printed in Mandingo by
the British and Foreign Bible Society from a translation by
Mr. Macbrair.

The Mandingo generally live on the produce of small
spots of ground which they cultivate, and by the chase; but
a considerable number apply themselves to commerce, and
enjoy great shrewdness and activity in trade. Their habi-
tations are mere huts, but many have their dwelling place
of town, and live in a more settled state than many of the
other negro tribes. They have also attained some skill in
tanning leather, and in smoking and working iron.

(Mungo Park's Travels in the Interior of Africa; God-
bery's Voyages in the Interior of Africa; An Account of a

Mandoline. A musical instrument of the lute kind,
but smaller, having four strings, which are tuned as those of
the violin. The mandoline is still met with occasionally in
Italy, where it is used in the new operas and other parts of Europe.

Mandoria. A musical instrument of four strings,
of the lute kind, no longer in use under such name.

Mandrake. [Aetropa.]

Mandril. [Baboone, vol. iii, p. 231.]

Mandshooria now constitutes a government of the
Chinese Empire under the name of Kiptoo-ola, or Chin-ool.
It is the most eastern projection of the high lands of
Central Asia, and lies between 42° and 56° N. lat., and be-
tween 126° and 142° E. long. Its surface is estimated at
650,000 or 750,000 square miles, which is more than triple
the surface of England. It borders on Siberia, from which it is separated by a mountain-range, which is
broadly known to the Russians, or the Khing-khan Tur-
wick of the Chinese. On the west it is divided from the
Russian province of Dauria by the river Kerlon, an afflu-
tent of the Yablonoi, which borders on the mountain-range called Khing-khan-ool. On the south it joins the Chinese provinces of Pe-cheli and Lemo-tung, the latter of which formerly belonged to Mandshooria, and has only been detached from it since the present imperial
empire of the Russians traversed the territory. On the north it is, of course, from which it is divided by the Tsai-yung-shan or Shan Ailn, a high range; and farther north the Sea of Japan and the Gulf of Tartary, which separate the large
island of Tartakai from Mandshooria.

A very small portion of the country has been explored by
Europeans. The Jesuits who were sent by the emperor to
survey the country visited the mountainous tract contiguous to the Tsai-yung-shan as far as Ninguta; and some Russian embassies traversed the country along the eastern declivity into Kiptoo-ool. The remainder is almost entirely unknown.

Mandshooria may be considered as an immense valley
enlosed by high and steep mountains, except at its south-
western corner, where a broken and rather hilly tract
stretches for many miles between the mountain-range
and the shores of the Amur. This mountain-range, which forms the western boundary, seems to be the highest. Towards its southern extremity, between 42° and 43° N. lat., is the peak of Persa,
which is thought to rise to more than 15,000 feet. There
are other smaller peaks and mountain chains of the
Yablonoi, the Yolno soot, and even in April is covered with deep snow. The mountain-range of the Yablonoi
Krebret does not attain the snow-line; and it seems that the
range is not more than 2500 or 3000 feet above sea-level. Along the Gulf of Tartary the coast is formed by an ex-
ceedingly steep mountain-range, rising to 4000 or 5000 feet,
and coming close up to the sea, so that only a few vessels
are able to penetrate the mountain-channel, and reach
the water. On the eastern declivity of this range there is
a tribe which seems to belong to the same race as the inhab-
bitants of Japan; they are called Ainos or Kechen, and live
on the produce of their fishing. This mountain-range
seems to possess no passage, as the Ainos have no intercourse with the Mandshoos, who inhabit the country west of the
range. At its southern extremity (43° N. lat.) this moun-
tain range is probably connected with the Shan Ailn and its
continuation the Tsai-yung-shan, which appears to run
a narrow and steep-walled tract of the mountain-system, and
the mountain-channel, the region of the Vlchon, which is also called the Eastern Gobi. In some parts the
surface is covered with salt inerustations. The remainder
of Mandshooria is supposed to consist of a succession of
valleys and mountain-ranges of various elevation. The
mountains are usually dry and cold, and do not appear to
reach the snow-line. The Yablonoi is too cold as agriculture,
and its inhabitants live on the produce of their herds
and of the chase.

Though the climate of Mandshooria is not equal in severe-
tude to that of the Gobi, it must be very cold, as we may infer from its geographical position and its elevation.

The principal river is the Amur, which has numerous
features of their face, more resembling the Hindus, or blacks of
India, than the other negro tribes of Africa.
tributaries. [AMUR.] Through the southern districts runs the Siru-Muren or Leso-Ho, which flows about 500 miles; it rises in the Khing-khan range north of the Peak of Pecha, and runs for nearly 400 miles east, and the remainder of its course south-west, until it falls into the Gulf of Leso-Ho. It seems to have been accredited nearly up to the place where it turns to the south-west.

Agriculture is common south of the river Amur. Wheat, rye, barley, and buckwheat are cultivated extensively, as well as hemp and cotton. The forests, which cover the greater part of the forested area, are a source of valuable timber.

The population consists of various ethnic groups. The Amur is the main river and provides a significant source of water for irrigation and transportation.

The Amur region is also known for its rich history, with evidence of ancient settlements and cultural activities.

The Amur region is rich in biodiversity, with various plant and animal species found in the region.

**MAN**

The name given to the Romans by souls separated from the body. According to Apuleius (De Deo Sacro), the manes were divided into two kinds, lares and larves; the former being the souls of such persons as had lived virtuous lives, and the latter of such as had been wicked; but that afterwards the name of manes was applied to both.

Augustus, in C. 10. I. 121, gives account; he says that the souls of good men became larves, those of evil men lemures or larves, and those respecting whom it was uncertain whether their virtues or vices most predominated, were called Eumenides by the Greeks. Some considered the manes as the good and bad genii which accompanied a man through his life; but this notion appears to have been introduced by the later Platonists.

-from the Townley Gallery, British Museum. The term 'gods,' applied to the manes, would appear to imply a kind of deification of departed souls. If such is the fact, it would be a curious matter of inquiry to ascertain when the manes were first honoured with the title of 'dei' or 'gods.' The things which were left or belonged to the Dii Manes were Religious; those consecrated to the Dii Superi were called Sacres. (Galaus. ii. 4.)

The history of the Pontifex Maximus to see that the manes were propitiated by proper ceremonies (Liv., i. 29); and with this object it was usual to pour libations of wine on the funeral altar, and also sometimes to slaughter animals, especially such as the deceased had been fond of. (Plin., Ep., iv. 2.)

**MANETHO** (Manduvis, Manet, Mandulis, or Mannev), a celebrated Egyptian writer, a native of Nesis, who is said to have lived about B.C. 300, and who has been edited by Atilius and Rigler, Cologne, 1832. It is probable however, for many reasons, as Huyne has shown in his 'Opuscula Academicca' (vol. i., p. 95), that parts at least of this poem could not have been written till a much later date.

Manetho thought of the history of the ancient kings of Egypt, which there is every reason for supposing was written by the Manetho who lived under Ptolemy Philadephus. It was in three books or parts, and comprised the period from the commencement of thePhcenician period to the time of the last Ptolemaic kings. Considerable fragments are preserved in the treatise of Josephus against Apion; and still greater portions in the Chronicles of George Syncellus, a monk of the tenth century. The Chronicles of Syncellus were principally compiled from the Chrones of Manetho, who wrote in Greek, bishop of Caesarea, both of whom made great use of Manetho's History. The work of Africanus is lost, and we only possess a Latin version of that of Eusebius, which was translated out of the Armenian by Radul., and preserved by Constantine. Manetho derived the history of the kings of Egypt, whom lie divide into 30 classes, called dynasties, from the sacred records in the temple at Heliopolis.

In addition to these works, Manetho is also said to have written:—1, Ιονί Βιβλία on the Egyptian religion; 2, Βιβλία της Άρωμας, the subject of which is doubtful; 3, Πορτογκαλικά και ηθικά, on the antient rites and ceremonies of the Egyptians; 4, Φυσικός Ιερός (Laert. Proem., s. 10), the same work as that which called by Suidas φυσικά.

It is no easy matter to ascertain the real value of Manetho's History in the form in which it has come down to us. The reader may judge of the use that has been made of it for Egyptian antiquities by reading Rask's De Egypti Antiquitate Zeichnungen (Altona, 1830), to the works of Champollion, Wilkinson's Topography of Thebes, and the other authorities which will be indicated by a reference to these works.


**MANETTIA CORDIFOLIA** is a Brazilian twining plant, whose roots possess considerable emetic energy. The bark is administered in Brazil in powder, in doses of 4 to 14 drachms, and is considered a most valuable remedy in dropy and dysentery. (Lindley's Flora Medica, No, 862, p. 432.)

**MANEFOUT. [EGYPT.]**

MANFRE'DI, natural son of the emperor Frederick II. and of a Lombard lady, was appointed by his father, at his death, A.D. 1250, regent of the kingdom of the two Sicilies, until the arrival of his brother Conrad, the legit
M.A.N

were son and heir of Frederic, Pope Innocent IV. excommunicated Manfred, and declared that the dynasty of Suabia had forfeited the crown of Sicily in consequence of Frederic having revolted against the see of Rome, whose feudatory he was. Upon this, most of the towns of Apulia revolted against the authority of Manfred. Conrad however was eventually freed from Genua soon after the rebels, but he died in the midst of his successes, in 1254, leaving an only son in Germany, Corradino, then a child two years old. Manfred became again regent of the kingdom in the name of his nephew, and as such had to care for his own fortune. His present political situation, among whom the powerful baronial house of San Severino stood foremost, the city of Naples opened its gates to the pope and swore allegiance to him; but Manfred found refuge among his father's faithful Saracens at Lucera. Upon the death of Innocent, which took place soon after, Manfred recovered possession of Naples, and cleared the kingdom of the invaders. A report being spread that Corradino had died in Germany, the barons, prelates, and towns of the kingdom invested Manfred to ascend the throne; as he was Forty years of age, and had no male issue, the crown should at his death devolve on his nephew or his nephew's heirs. No one presumed to gainsay Manfred's words: he was brave, high spirited, and handsome, and the idol of the people, and many of the Barons, having delivered themselves into the hands of Manfred, and his illegitimate birth was no longer remembered. Margaret herself tacitly assisted to his retaining the crown upon such conditions: her son was but a boy, and had a fair prospect of succeeding his uncle in due time. The crown Manfred's good fortune, and he crowned himself Alexander IV. made peace with him. Manfred was now looked upon as the hereditary protector of the Guibelines of North Italy, and he sent troops to the assistance of those of Tuscany, who defeated the Guelphs at Montaperto, and occupied Fiesole and Pistoia, and besieged Florence at the head of 30,000 men, by Urban IV., an inveterate enemy of the Guibelines and of the House of Suabia. The new pope began by excommunicating Manfred, treating him as a usurper, and offering the crown of Sicily for sale amongst the princes of Europe. He offered it to Richard, King of Cornwall, brother to Henry III. of England, who laughed at the proposal, and said 'it was like making him a present of the moon.' Urban then offered the crown of Sicily to Henry himself for his second son Edmund, but the English king had neither troops nor forces such a claimant. At Such a time the pope addressed himself to Charles, count of Anjou, brother of Louis IX. of France, who accepted the offer in 1264: the conditions were, that he should receive the crown of Sicily as a fief of the see of Rome, pay a yearly fee of a thousand ounces of gold or an annual payment of 27,000 dollars, a quarter of the right of nominating to all the sees of the kingdom, and grant an appeal to Rome on all ecclesiastical affairs. After concluding this bargain, Urban died, but his successor Clement IV. followed up his policy. Charles having collected an army of his Provençal vassals and of French adventurers, came to Rome, where he was solemnly crowned by Clement in 1265. In January, 1266, he marched from Rome, and entered the dominions of Manfred, who met him there, and during a short parley of 20 days, a peace took place in the month of February. Manfred's faithful Saracens fought bravely, but being unsupported by the Apulian troops, who refused to advance, they were thrown into disorder, and Manfred, seeing himself betrayed, spurred his horse at full speed to the rear of the van, and fell under a heap of the slain. His body was buried by Charles's soldiers, without any honour, under a heap of stones on the banks of the river Calore, but the papal legate ordered it to be disinterred, because, being excommunicated, it could receive no form of burial. Beneventum was delivered to the Bishops of Abbruzzo, where it was allowed to rest on the banks of the river Verde, an affluent of the Tronto, near Ascoli. Dante, in pathetic and at the same time indignant strain, alludes to this disgraceful form of fanaticism, 'Purgatorio,' c. 23.

Manfred was fond of letters, was himself a poet, and is praised by the Neapolitan chroniclers for his great and noble qualities. The Guiphs writers, on the contrary, have accused him of horrid crimes; among others, of poisoning and incest. This tradition has preserved the remembrance of him as a dark and mysterious character. Manfred was the founder of the town of Manfredonia.

MANGREDO'S. [CAPITANATA].

MANGABEY, a name for two species of monkeys belonging to the group of Cercopithecus. [Gorilla.]

MANGALORE. [HINDUSTAN, p. 207.]

MANGANESE, a metal of which the black oxide, or bauxite, was first described by Scheele in 1774, and was afterwards determined by him and Gahn to contain a peculiar metal, which has so far been only used for nitric acid. Its occurrence is extremely rare. It is occasionally found in minerals in such small quantities as to show that it exists in them rather in mixture than in combination.

Manganese may be procured by mixing any of its oxides with oil, and heating it strongly in a covered crucible. Its properties are such that it has a greyish-white colour and resembles white cast-iron in appearance; it is hard, brittle, and has a fasciculated crystalline structure; its specific gravity, according to Berthier, is 7.85: it is inodorous; it is tasteless, it gives no reaction with either nitric or hydrochloric acid. By exposure to the air manganese readily tarnishes by oxidization, and even in a very short time attracts sufficient oxygen to lose its metallic lustre, and falls to a reddish-brown powder; hence the necessity for preserving it immediately after it has been removed from the crucible. When heated to redness it slowly decomposes water; and at a red heat the decomposition is rapidly effected, and in both cases hydrogen gas is evolved and oxide of manganese formed. It requires an extremely high temperature for its fusion, and it is fixed in this state by the application of a strong current of air.

The ores of manganese are chiefly oxides: they are the following:

<table>
<thead>
<tr>
<th>Name</th>
<th>Composition</th>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese</td>
<td>Oxides</td>
<td>70.98</td>
</tr>
<tr>
<td>Oxygen</td>
<td>Oxides</td>
<td>0.37</td>
</tr>
<tr>
<td>Silica</td>
<td>Oxides</td>
<td>0.64</td>
</tr>
<tr>
<td>Pyrites</td>
<td>Oxides</td>
<td>0.79</td>
</tr>
<tr>
<td>Water</td>
<td>Oxides</td>
<td>0.43</td>
</tr>
</tbody>
</table>

The equivalent of manganese being 29, this ore is essentially a compound of 3 equivalents of metal 84.4 equivalents of oxygen 39.2 equivalent of oxygen 32.116. It contains less oxygen than any other oxide except the protoxide, which does not occur a nature except in combination.


Before the blow-pipe melts and effervescence slightly with borax.

It is found at Egelnit, Wursinidel, Pidmont, and the Cornwall.

According to Dr. Turner, it consists very nearly of—

<table>
<thead>
<tr>
<th>Name</th>
<th>Composition</th>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese</td>
<td>Oxides</td>
<td>67.76</td>
</tr>
<tr>
<td>Oxygen</td>
<td>Oxides</td>
<td>29.83</td>
</tr>
<tr>
<td>Silica</td>
<td>Oxides</td>
<td>0.95</td>
</tr>
</tbody>
</table>

It is essentially an anhydrous sesquioxide of manganese, consisting of 28.9 equivalents of metal 28.7 equivalents of oxygen 12.9 equivalents of oxygen 40.

Mangnite—Occurs crystallized and massive. Primary form a right rhombohedral prism. Cleavage parallel to the
M A N

381

Sulphur is also found in combination with manganese. The compound is called

Kobellite, Manganese Blende, &c.—It occurs crystallized and massive. Primary form a cube. Cleavage parallel to its faces. Fracture uneven, conchoidal. Hardness 3.5 to 4.0. Colour brownish-black; when fresh fractured, steel-grey. Streak dark-green. Lustre imperfect metallic, Opaque. Specific gravity 4.014.

Fuses with difficulty and only the edges with the blow-pipe; gives sulphurated hydrogen when dissolved in an acid.

It is found at Nagay in Transylvania, and in Mexico. Analysis by Arfwedson.

Manganese

Sulphur

Arsenic with a trace of Iron

99.6

56.2

51.8

Cupreous Manganese.—Occurs massive. Fracture in one direction granular and shining, in the other dull. Structure foliated. Hard. Brittle. Specific gravity 5.35. Found in Saxony. Colour whitish-grey. Blackens by exposure to the air. Dr. Kane found it to consist of—

Manganese

Arsenic

Oxide of manganese

Oxide of copper

Water

Sulphate of lime

Silica

97.3

100.35

Carbonic acid and silica also occur in combination with oxide of manganese, and the latter also with oxide of manganese and iron.


Found at Hartshill in Warwickshire, Nagay, Freyberg, &c.

Analysis of the carbonate from Nagay by Berthier—

Carbonic acid

Protoxide of manganese

Lime

100.4


It occurs in Sweden, the Harz, Devonshire, Cornwall, &c.

Analysis by Berzelius—

Silica

Oxide of manganese

Lime and magnesia

100.38

Leonhard has described some silicates of manganese under the names of allagite, phlogite, rhodentine, &c., which contain admixtures of various other substances.
Silicate of Manganese and Iron: Knebelite. — The locality of this is not known. It occurs massive. Externally cellular and uneven. Fracture imperfect conchoidal. Lustre glassy. Colour grey; spotted dirty-white, red, brown, and green. It is opaque, hard, and brittle. Specific gravity 3.714.

Analysis by Döbereiner:
- Silica: 32.5
- Protoxide of manganese: 33
- Protoxide of iron: 33
- Phosphoric oxide of manganese and iron: 99.5


Occurs at Limoges in France.

Analysis by Berzelius:
- Phosphoric acid: 32.8
- Oxide of manganese: 32.6
- Oxide of iron: 31.9
- Phosphate of lime: 3.2

Two other varieties have been described under the name of Heteposite and Harualite.

Having now noticed the more important manganese ores, we proceed to mention the action of other elementary bodies upon this metal, and first the artificial compounds of manganese.

Oxygen and Manganese. — It has already been mentioned that this metal falls to powder by oxidation, even by exposure to the air, and the oxide thus formed appears to be the red oxide of manganese: the native compound has already been described under the name of hausmannite. The protoxide of manganese exists in nature only in combination, forming the carbonate of manganese, also mentioned.

Protoxide of Manganese may be artificially procured in two or three ways:— 1st. When the peroxide of manganese is strongly burned on a retort for the purpose of obtaining oxygen gas, green protoxide of manganese will sometimes remain, though it is in general the red oxide which is thus obtained; 2nd. The protoxide may be obtained by passing hydrogen gas over any higher oxide, but the red is to be preferred as containing the least oxygen; 3rd, by mixing chloride of manganese with twice its weight of carbonate of soda, and heating the mixture in a platinum crucible, and afterwards dissolving out the chloride of sodium formed with water.

The properties of protoxide of manganese are:— It is of a light green colour. It undergoes no change by exposure to the air. It is insoluble in water. When heated to 600° it acquires oxygen, and is converted into red oxide; and sometimes, by exposure to a strong heat, it undergoes combustion as well as oxidation. When it is dissolved in water, and the solution is boiled, it forms white precipitate; but if it be boiled, it is converted into the potassium salt of the oxalate of manganese, which is a soluble salt.

Red Oxide of Manganese: Hausmannite, already described. — It is artificially obtained by submitting either the protoxide, sesquioxide, or peroxide of manganese to heat in a platinum crucible; the first acquires the two last lose oxygen by this process; in fact, whatever oxide or salt of manganese is strongly heated, it is decomposed and converted into this, and remains permanently such unless some additional deoxidizing agent be employed. It suffers no change by exposure to the air, is insoluble in water, and has a reddish colour. The nitric, sulphuric, and hydrochloric acids all decompose it, the two first separating it into protoxide and binoxide; and they dissolve the first and leave the second insoluble. With hydrochloric acid it yields a chlorid and chloride. It is composed of—

Four equivalents of oxygen ... 32 or 16 1/2 eq.
Three equivalents of manganese 84 27 1 eq.

Equivalent 116 58 64

Sesquioxide, Deutoxide of Manganese. — The nature has been described under the name of manganese. It may be artificially procured in the mode just alluded to, by decomposing a protoxide with an alkali, and exposing the precipitate to the air, it will be converted into the protoxide. It is obtained as a carbonate of manganese: in the former case oxygen is expelled, and in the latter carbonate acid is expelled and oxygen absorbed; it may further be obtained by decomposing the nitrate with heat. Its properties are:— It is brown, except what is obtained from the nitrate, and then it is nearly black. It is insoluble in water, suffers no change by exposure to the air, is decomposed by dilute nitric and sulphuric acids, being separated by them into protoxide, which dissolve, and peroxide, which remains insoluble. It is said to be soluble in strong sulphuric acid without decomposition; with hydrochloric acid it yields chlorides and chloride of manganese.

It is composed of—
One and a half equivalent of oxygen

One equivalent of manganese

Varvasici. — This has not been obtained by art means.

Binoxide or Peroxide of Manganese: Pyroclay. — The may be formed artificially by decomposing either the red oxide, sesquioxide, or varvasici by means of dilute sulphuric acid, there being separated from protoxide, and the protoxide and binoxide, which remains insoluble. It may also be prepared by adding chloride of lime to a solution of chlorides of manganese, in which case it is thrown down in the state of a black powder.

Its properties are:— It is black, or brownish-black, unstable in the air, insoluble in water, decomposed by heat into red oxide and oxygen gas, insoluble in alkalis, unacted upon by nitric acid or dilute sulphuric, but by the last acid, when concentrated, resolved into protoxide and oxygen gas, and this is sometimes used for preparing the protoplatine and oxygen. With hydrochloric acid it gives phosphochloric and chlorides.

It is composed of—
Two equivalents of oxygen

One equivalent of manganese

Equivalent 44

Of the five oxides of manganese it will appear that three are definite, by the action of dilute sulphuric acid, to the following compounds of the protoxide and binoxide, then:—

- As oxides: the protoxide and binoxide:
  - One equiv. of sesquioxide + 2 = 1 + 1
  - Red oxide + 4 = 3 + 2
  - Varvasici + 7 = 4 + 3

And in point of fact some chemists consider them to be rather compounds of other oxides than as constituting peculiar oxides. There are two acids of manganese which are entirely artificial compounds, namely, the manganese acid and per-, or, more properly, the hyper-manganese acid.

Manganic acid has not hitherto been obtained in a separate state; but manganese of potsash is easily prepared by heating the silver crucible one part powdered brown of manganese and two parts of potsash. When the mixture has been kept at a dull red heat for an hour, it may be poured out, and when cold put into a bottle and excluded from the air.

The manganate of potsash thus obtained is of a green colour. During the operation of the heat one portion of the binoxide yields oxygen to the other, which is by this converted into manganic acid, and this united with the potsash, forms the salt in question, which has long been known by the name of ferrous manganate, and the amount of the change of colour which the solution undergoes: on the first addition of cold water a green solution is obtained; this soon becomes blue, purple, and red, and ultimately brown; by dilution with water, the manganate formsates, and these are rendered colourless. These changes are produced more quickly by employing hot instead of cold water; they are
owing to the conversion of the manganate into red hyper-
manganate of potash, the varied tints being derived from a mixture of these two salts.

By keeping a strong solution of the green manganate of potash to subside, and allowing the clear liquor, when poured off, to evaporate in vacuo over sulphuric acid, the salt is obtained in crystals, which are anhydrous and permanent in their dry state, but must be kept from the contact of organic matter, which speedily deoxidizes the acid.

Manganic acid is composed of—

| Three equivalents of oxygen | 34 |
| One equivalent of manganese | 28 |
| **Equivalent** | **52** |

**Hypermanganic Acid.**—This may be prepared by several processes. Mix together four parts of finely-powdered binoxide of manganese, three and a half of chlorate of potash, and five of hydrous sulphuric acid, the solution to dryness in platinum crucibles. Evaporate the mixture to dryness, and heat it to dull redness in a platina crucible. The mass is to be added to a large quantity of boiling water; and when separated from the residue, the hypermanganic is to be quickly evaporated and allowed to crystallize; the crystals are to be washed with a very little boiling water, and are of a very deep colour.

Hypermanganic acid may be obtained in a separate state by decomposing the barytic salt with dilute sulphuric acid. It has a fine red colour, and is rapidly decomposed by organic matter, as paper or linen. It bleaches coloured matter; the aqueous solution begins to decompose when heated to 86°, and is totally decomposed at 212°; oxygen is given out, and binoxide of manganese is precipitated. Its salts are more permanent than the acid, and when heated they yield oxygen gas, deoxidates when thrown on burning charcoal, and detones violently with phosphorus.

A very minute portion of hypermanganate of potash imparts a very purple to a large quantity of water.

Hypermanganic acid is composed of—

| Three and a half eqv. of oxygen | 32 |
| One equivalent of manganese | 28 |
| **Equivalent** | **60** |

**Chlorine and Manganese** form two compounds. The protocliloride may be prepared by dissolving any pure oxide in hydrochloric acid, and evaporating the solution to dryness out of the contact of air. It is a pink-coloured laminated mass, which attracts moisture readily from the air, and is very soluble in water, forming a solution which is nearly or quite colourless.

It is composed of—

| One equivalent of chlorine | 36 |
| One equivalent of manganese | 28 |
| **Equivalent** | **64** |

**Perchloride of Manganese** is prepared by the mutual decomposition of hydrochloric and hypomanganeseic acids. It is a greenish-coloured vapour, which, by cooling to 4°, condenses into a greenish-brown-coloured fluid. When it comes in contact with moisture it resolves again into hydrochloric and hypermanganic acids.

It is composed of—

| Three and a half eqv. of chlorine | 126 |
| One equivalent of manganese | 28 |
| **Equivalent** | **154** |

**Sulphur and Manganese** may be combined by heating a mixture of sulphur and the binoxide. Sulphurous acid gas evolves and a liquor of dilute sulphuric acid, the salt being hydrolysulphuric acid when dissolved in acids. It may also be prepared by the addition of a hydro sulphate to a sulphate of manganese. It is then precipitated in combination with water, which modifies the colour.

It is composed of—

| One equivalent of sulphur | 16 |
| One equivalent of manganese | 28 |
| **Equivalent** | **44** |

According to Berzelius manganese combines with several other metals, as gold, silver, copper, tin, and iron; with the last-mentioned combination takes place readily, and the iron is rendered harder, whiter, and more brittle by it; and it is stated that iron which contains manganese is best adapted for making steel. A small quantity of iron causes manganese to obey the magnet, and renders it less oxidizable. The salts of manganese are compounds of very little importance. As that which is most readily obtained in a pure state, and as offering a type of the soluble salts of this metal, we will mention the

**Sulphate of Manganese.**—This salt may be obtained by dissolving the protoxide or carbonised in dilute sulphuric acid; a solution is obtained which is nearly colourless, or sometimes of a slight pink colour, owing to the presence of a little hypermanganic acid. By evaporation colourless rhombic crystals are obtained, which have a bitter taste, differ from a dilute solution, and are soluble in about two and a half times their weight of water.

This salt is decomposed by the alkalis ammonia, potash, and soda, which precipitate colourless hydrated protoxide; and by the carbonates, which throw down white protocarbonate of manganese, which acquires oxygen and a brown colour, and are converted into deutoxide. Ferrocyanide of potassium gives a white precipitate, and hydrosulphuret of ammonia an orange one. Manganese is not precipitated in the metallic state by any other metal.

**Oxide of manganese** tinges glass of an amethystine colour.

The oxides of manganese, and especially the binoxide, as containing most oxygen, are largely employed in the preparation of the manufacture of bleaching-powder, or chloride of lime. It is employed in glass-making to correct the yellow colour which oxide of iron is apt to impart to the glass; it is used also in making the black enamel of pottery. Sulphate of manganese has been used within a few years to give a brown colour in calico-printing.

**MANGE, an eruptive disease to which many domestic animals, and particularly dogs, are subject. It usually occurs as the result of the confinement, bad or deficient food, or some other circumstances producing a generally unhealthy condition. It has many analogies to the itch in man [itch]; and the fluid discharged from the eruption of the mange in horses and dogs has sometimes been known to produce the itch in men. It does not appear to depend in general on the presence of a minute species of Acarus which burrows beneath the skin, and thus excites the irritation and itching by which these diseases are peculiarly characterised.

**MANGEL ROSE [Melilotus]**

**MANGIFERA, a genus of trees of the natural family of Terebinthaceae, tribe Anacardiaceae, so called from the Malayan name (manga) of the fruit, and jero, I bear. Three or four species of this genus are enumerated: as *M. fezida* of Java, the native of Cochinchina; *M. melacrydris* of Malacca and the Molucca islands; *M. lasjflora*, indigenous in Mauritius; and *M. sylyvaticus*, of Roxburgh, a native of the hilly districts bordering on Silhet, where it grows to a great size, and is called *lukhahneam*. It bears a fruit which ripens in February or March, and the taste of its precipitate is not rivaled even as a bad mango. It is also dried and kept by them for medicinal purposes. *M. oppositifolia*, Roxb., a native of Rangoon, is proposed by Messrs. Wight and Arnott to be formed into a distinct genus.

The Mango tree, *Anacardium occidentale*, Mangifer indicum, is alone of any consequence, and this as forming one of the most graceful fruits of the tropical parts of Asia; it extends also as far north as 30°, and has been successfully introduced into the West Indies, and is grown in the civilized districts of the south, but is much prized in the East Indies, and dark-coloured cracked bark. The wood is of a whitish or a dull grey colour, porous, yet pretty durable if kept dry. The leaves are alternate, petioled, lanceolate, entire, often a little waved at the margins, firm, smooth, shining, and fringed with a pleasant resinous smell. The flowers are yellow-coloured and small, but produced in great numbers, on large terminal erect panicles. Many perfect male flowers are often found intermixed with the hermaphrodite ones. Calyx five-lobed. Petals five, lanceolate, twice the length of the calyx, furnished in the inside with a lobed glandular scale or crust. Stamens a single fertile one, with three or four filament-like bodies, which represent the abortive stamens. Ovary with its base immersed in the torus, obliquely oval, one-celled, with a single ovule attached to the side of the cell. Style one, from
the upper edge of the ovary, curved downwards. Drupe oblong, or somewhat kidney-formed, also a little compressed like a kidney, fleshy, with a smooth rind, yellow or reddish when ripe, and sometimes very, but in general about as large as a goose's egg. Nut conformable to the drupe, but more compressed, woody, one-celled, two-valved, covered on the outside with many fibrous filaments, particularly in the worst sorts. The kernels are large. Empires between erect and transverse. Cotyledons thick, fleshy. Radicle opposite to hilum.

The Mango is so well known as one of the most highly esteemed fruits of the East, that one is surprised to find it so uncommon, it is a tree, resembling nothing as much to the taste of the French as melon. The latter is a secretion abounding in the family to which the Mango belongs, and may be secreted in larger quantities in neglected varieties, where also the filaments of the nut will likewise abound. But in well-cultivated trees, where the Mango is fit for market, and with the utmost culture, and with the utmost care, as if it were a tree, the nuts are apt to be scat with too much water. Fresh seeds from the West Indies vegetate freely. The plant may also be increased from cuttings, which root best in sand under a hand-glass. It would be advisable also to imitate its native climate as much as possible, that is, after winter, giving it dry heat with watering for some months, and then removing it into an orchard house in the season of ripening its fruit.

**Mangifera indica.**

**Mangouste.** [Ichneumon.]

**Mangrove.** [Rhizophora.]

**Manheim, or Mannheim,** the capital of the circle of the Lower Rhine, in the grand-duchy of Baden, is situated in 49° 46' N. lat., and 28° E. long., in a very fertile plain, at the junction of the Neckar with the Rhine. Over both rivers there are bridges of boats: that over the Rhine, which belongs to Baden and Bavaria in common, rests on 43 pons; that over the Neckar, which rests on 26 pons; their length is about 900 paces. It is a wall, built with great regularity: it consists of broad, straight, parallel streets, of which 11 run in one direction, and are crossed by 11 others at right angles. The houses are handsome, of equal height, all of two stories, except those at the custom-house, which are of five stories. It would be advisable also to imitate its native climate as much as possible, that is, after winter, giving it dry heat with watering for some months, and then removing it into an orchard house in the season of ripening its fruit.

**Manheim.**

**Mannheim's.** [Ichneumon.]

**Mangouste.** [Ichneumon.]

**Mangrove.** [Rhizophora.]

**Manheimer, or Mannheim,** the capital of the circle of the Lower Rhine, in the grand-duchy of Baden, is situated in 49° 46' N. lat., and 28° E. long., in a very fertile plain, at the junction of the Neckar with the Rhine. Over both rivers there are bridges of boats: that over the Rhine, which belongs to Baden and Bavaria in common, rests on 43 pons; that over the Neckar, which rests on 26 pons; their length is about 900 paces. It is a wall, built with great regularity: it consists of broad, straight, parallel streets, of which 11 run in one direction, and are crossed by 11 others at right angles. The houses are handsome, of equal height, all of two stories, except those at the custom-house, which are of five stories. It would be advisable also to imitate its native climate as much as possible, that is, after winter, giving it dry heat with watering for some months, and then removing it into an orchard house in the season of ripening its fruit.

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power of malignant matter. Referring to the promise of Christ shortly before his crucifixion, which is recorded by John (xvii, 19), that he would send to his disciples the Comforter, 'who would lead them into all truth,' the Manicheans maintained that this promise was fulfilled in the person of Mani, who was sent by the god of light to declare to all men the doctrine of salvation, without concealing any of its secrets, and to confer on mankind eternal life and everlasting glory. Mani also taught that those souls which obeyed the laws delivered by Christ, as explained by himself the Comforter, and struggled against the lusts and appetites of a corrupt nature, would, on their death, be delivered from their sins, and go to eternal bliss. The other, on the other hand, would ascend to the regions of light; but that those souls which neglected to struggle against their corrupt natures would pass after death into the bodies of animals or other beings, until they had expiated their guilt. Their belief in a universal retribution led them to deny the doctrine of the resurrection.

Mani entirely rejected the authority of the Old Testament, which he said was the word of the god of darkness, whose name was worshipped in the place of the god of light.

The disciples of Mani were divided into two classes, one of which was called the Elect, and the other Hearers. The former were bound to abstain from animal food, wine, and all sensual enjoyments; the latter were considered as imperfect and feeble Christians, and were not obliged to submit to such a severe mode of life. The ecclesiastical constitution of the Manichaeans consisted of 12 apostles and a president, who represented Christ; of 72 bishops, who also represented the 72 disciples of Christ; and of presbyters and deacons, as in the Catholic church.

The Manicheans never appear to have been very numerous, but they were spread over almost all parts of the Christian world. Numerous treaties were written against them, the most important of which were by Eusebius of Caesarea, Eusebius of Emesa, Serapion of Thumis, Athens, and Zephyrius. A number of Manichaeans continued to exist in Caesarea, Thessalonica, and Titus of Bostra. Much valuable information concerning this sect may be found in the writings of Augustine, who was for nine years a zealous supporter of the Manichean doctrines. The Manicheans were generally considered to be a branch of the Manichean sect, and are supposed to have appeared first in the seventh century in Armenia, and to have derived their name from Pea, a zealous preacher of the doctrines of Mani.

In the sixth century the Manichean doctrines are said to have spread very widely in Persia. They continued to have supporters, under their new name of Paulicianism, till a very late period in ecclesiastical history. About the middle of the eighth century the emperor Constantin had some Manichaeans executed in a place which has been called the number of Manichaeans to Thrace; where they continued to exist even after the capture of Constantinople by the Turks. In the eleventh and twelfth centuries the doctrines of the Paulicians were introduced into Italy and France; and met with a warm reception.

(Neander's Kirchengeschichte; Mosheim's Ecclesiastical History; Lardner's Credibility of the Gospel History, Works, vol. iii, ed. of 1831; Gibbon's Decline and Fall, c. 549-565; De Ilia Militium Veterum Persarum; D'Herbelot's Bibliothèque Orientale, art. Mani.)

MANICHORD, a keyed musical instrument, of the spinet kind, similar in all respects to the clave chord.

CLAVERICHORD.

MANNES, MARCUS or CAIUS (whose name is sometimes written Mauilius or Manius), a Latin poet, who wrote a work on astronomy, called 'Astronomicon,' in five books. We possess no particulars respecting his life, but the opinion of Bentley seems the most probable, that he was born in Asia, and lived in the time of Augustus Caesar.

Some writers suppose Manlius to be the same person as the Manilius or Manlius of Antioch, the astrologer, mentioned by Pliny (H. N., xxxv. 17), and others the same as Manlius the mathematician, also mentioned by Pliny (xxvi. 15, s. 6); but the only reason for these opinions exists in the name, and the absence of any other covering.

The 'Astronomicon' does not appear to be complete. The five books which are extant treat principally of the fixed stars; but the poet promises in many parts of his work to give an account of the planets. The 'Astronomicon' contains several previous treatises that are not unworthy to be compared with some of the best writings of the Augustan age; but the subject gave the author little opportunity for the exercise of his poetical powers. It appears from many parts of the work that Manlius was a staunch adherent of the Stoic philosophy.

A MS. of the 'Astronomicon' was first discovered by Poggio in 1416. The best editions are by Bentley, Lond., 1739, and Stoebcr, Argent., 1676. It has been translated into English verse by Croceh, Lond., 1706.

MANILLA, PHILIPPINE ISLANDS.

MANIPULATION, in chemistry, embraces every part of the subject which is of a mechanical nature, such as the operations of weighing, measuring, the application of heat and cold, the modes of elevation and abstraction, and the processes of transpiration, distillation, and sublimation, and in fact every step in chemical research includes manipulation. It will be impossible therefore to treat of the whole of this subject under one head, and the most important parts of it will be found under the following heads: [CALCIFICATION; DISTILLATION; FILTER, &c.] This subject is admirably treated in Faraday's 'Chemical Manipulation.'

MANIS. [Pangolins.]

MANNILIUS, the name of one of the most illustrious patriots and geniuses of ancient Rome. Those most worthy of notice are:

1. Marcus Manlius Capitolinus, who was consul b.c. 390 (Liv., v. 31), and was the means of preserving the capitol when it was nearly taken by the Gauls (Liv., v. 47), from which it is supposed he obtained the surname of Capitolinus. He afterwards became a warm supporter of the popular party against his own order, and particularly distinguished himself by the liberality with which he assisted those who were in debt. He publicly sold one of his most valuable estates, and declared that as long as he had a single pound he would not allow any Roman to be carried into bondage for debt. In consequence of his opposition to the patrician order he was accused of aiming at the kings power. The circumstances of this most cowardly and unworthy action are involved in obscurity. It would appear that he was accused before the centuries and was acquitted; and that afterwards, seeing that the patrician party were determined on his destruction, he seized upon the capitol, and prepared to defend it by his arms. In consequence of this, Manlius was appointed dictator, and the curule (i.e. the patrician assembly) condemned him to death. According to Livy, who implies that Manlius did not take up arms, he was thrown down from the Tarpeian rock by the tribunes; but Niebuhr supposes, from a fragment of Dion (xxxiii.) compared with the narrative of Zonaras (vii. 24), that he was treacherously pushed down from the rock by a slave, who had been hired for that purpose by the patrician party. (Roman History, vol. ii., p. 610, 611, Eng. transl.; Liv. vii. 11, 14, 20.) The last of the Manillian families was distinguished by the name of Manlius. It seems that some of the Manillian gens resolved that none of its patrician members should again bear the name of Marcus. Manlius was put to death b.c. 381.

2. Titus Manlius Capitolinus Torquatus, son of L. Manlius, surnamed Censorinus, who was dictator b.c. 361. When his father Lucius was accused by the tribune Pomponius on account of his cruelty towards the soldiers under his command, and also for keeping his son Titus among his slaves in the country, Titus is said to have written a letter, in which he stated that he was about to leave his house to Pompey shortly before the trial, and to have compelled him, under fear of death, to swear that he would drop the prosecution against his father. This instance of filial affection is said to have operated so strongly on the mind of Titus Manlius Torquatus (in the year 359) one of the military tribunes. (Liv. vii. 4, 5; Cicero, De Off., iii. 31.) In the following year Manlius distinguished himself by his courage and valor.

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playing in single combat a Gaul of gigantic size on the banks of the Anio. In consequence of his taking a chain (torques) from the dead body of his enemy, he received the surname of Torquatus. (Liv. vii. 10.)

Manlius filled the office of dictator twice, and in both instances he had been appointed consul once, in order to conduct the war against the Samnites, n.c. 351; and the second time, in order to preside at the Comitia for the election of consuls, n.c. 346. (Liv. vii. 19-26.)

Manlius was consul at least three times. (Cic. De Off. iii. 31.) In his third consulship he defeated the Latinus, who had formed a powerful confederacy against the Romans. In the same campaign he put his own son to death for having engaged in single combat with one of the enemy, contrary to the laws. (Liv. viii. 1.)

3. Manlius Torquatus was consul n.c. 235, and obtained a triumph on account of his conquests in Sardinia. (Vell. ii. 39; Flor. iii. 3.) In his second consulship, n.c. 224, he conquered the Gauls. (Polyb. ii. 31.) He opposed the runaway Manius Vulso n.c. 189, and appointed to the command of the war against the Gauls in Galatia, whom he entirely subdued. An account of this war is given by Livy (xxvii. 12-17), and Polybius (xxvii. 16-22).

After remaining in Asia the following year as praefectus annonae, he was attacked by the inhabitants in a narrow defile and plundered of part of his booty. He obtained a triumph, n.c. 186, though not without some difficulty. (Liv. xxvii. 6.)

MANNA, the concrete juice of a species of Larix europaea, a plant indigenous to the Native of the South of Europe, growing abundantly in Sicily, Calabria, Apulia, &c. The juice exudes spontaneously in warm dry weather, and concretes upon the bark of the tree; the finest manna is however procured by making long flat incisions of about three inches long. The manna flows at first in the form of a thick juice, which gradually concretes. The finest kind is called Calabrian or flake manna; it is in pieces of a pale yellowish white colour, is light, dry, rather brittle, and it bears frequently the impression of a branch on which it concretes. IT IS A SLIGHTLY PECULIAR OLOUR, and a sweetish taste, mixed with a slight degree of bitterness, and altogether leaves a disagreeable impression. Its texture is generally granular; but the finer pieces when broken are often hollow, and when examined by the microscope exhibit peculiar crystals. Manna is perfectly soluble both in water and in alcohol; the crystals deposited by cooling a hot spirituous solution constitute a peculiar variety of sugar, which has been called mannie; it differs however from common sugar in not being crystalline. A man of the Rached, 400 parts of flake manna contain about 20 of mannie, mixed with uncrystallizable sugar, purgative principle, gum, &c.

Manna is composed of

<table>
<thead>
<tr>
<th>Substance</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen</td>
<td>68</td>
</tr>
<tr>
<td>Carbon</td>
<td>106</td>
</tr>
<tr>
<td>Oxygen</td>
<td>283</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>456</strong></td>
</tr>
</tbody>
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Manna is employed as a gentle laxative, for children or persons of weak habits. It is however seldom administered alone, but as an adjunct to other more active medicines, as sena, rhubarb &c. (Oxon.)

D. desertorum, found in India, Egypt, Arabia, the north of Persia, and Syria. Both species are also called *Eustachir* or *camel's thorn. A. mauroia* is alone remarkable for yielding a kind of manna, which by some authors has been supposed to be a species of *Acacia*. It is found in the north of Arabia, and is called *Manna hebraica* by Mr. Don. The name of Persia and Bokhara seems alone suited for the reception of this manna, which in the latter country is employed as a substitute for sugar, and is imported into India and China. A second kind, which is much more abundant, is more esteemed than the former, is called *khiht*, and is mentioned by Garcias under this name, as described in the country of the Czebs. A Cauliflower merchant reported to Dr. Royle that it was produced by a tree called guajus, which was about twice as high, had a jointed stem, and grew in Casabasso. A third kind of manna is called *guynubm*, the produce of a species of Tamarsissi, called *guz*, which is collected by the use of horebees, and Ehrenberg says to be only a variety of *Tamarissi guynub* growing on Mount Sini, but which has been called *mannurra*; by some authors this is supposed to be the Mannia of the Wilderness. It is said to be produced also in Laristan and in Irak Ajei. A fourth kind of manna is produced on *Calotropis procera*, called *gashr*, and its sweet exudation or sugar *shukar-at-aster*, under which name it is described by Avicenna; Zacccharum al-husaar in the Latin translation, ch. 758. A fifth kind, called *sidh khati*, is described in Persian works as being produced on a species of willow in Persian Khorassan. Besides these comparisons, there is another species of manna introduced on the larch (Larix europaea), which forms the Mannia grandifica, or Brionius Mannia of some Pharmacopoeia.

MANNINGTREE. [Essex.]

MANNA, 1. Manna.

2. MANOMETER (from two Greek words, *mano* the base, *mure* rare, or rare, and *mirep*, a measure) is the name given to instruments which measure the rariety of the atmosphere or other gas. As however the rarity of a gas is proportionate to its elastic force, so long as its temperature and chemical constitution remain unaltered, it follows that to measure the elastic force of gases are also with that restriction properly termed manometers, and accordingly it is to these latter instruments that the term is most frequently applied both in this country and upon the Continent.

Captain Philp, in his north-polar voyage, and Colonel Roy, in order to correct his barometric observations, employed manometers, which gave the elastic tension of the atmosphere. They consisted of glass tubes similar in form to the manometer tubes, and of various sizes. Those of Colonel Roy were from four to eight feet in length, with bore from one-eighth to one-twentieth of an inch in diameter. The bulb and part of the tube being filled with air a tube was attached to the bottom of the tube, and the remaining of the tube being partially occupied by a small column of manna, was cut off from the communication between the internal and external air; any variation in the elastic tension of the air arising from change of weight, would be accurately measured by the manometer, or by the manometer connected with the manometer.

For whenever the tension of the atmosphere exceeds that of the contained air, the column would move towards the bulb, and the contrary. But if the change in the tension of the atmosphere were partly attributable to a change of weight, the manometer would measure the difference of the variations in the tension of the internal and external air, because the tension of both would be equally affected by the change of temperature. The bulb was four inches in diameter, so that the manometer was to be connected with a whole manometer, and the bulb sealed again without any sensible diminution in its capacity. (Ann. Trans., vol. xxv. p. 162.)

Manometers of Vareges and Wolf were similar to the previous instrument.
A more convenient instrument, and one of more general use, consists of a siphon-barometer, the basin of which is enriched with a glass tube, the upper part of which is formed into a vessel, furnished with a number of cocks, by means of which the contained gas may be removed, and other gases successively substituted in its place. If equal parts by weight of different gase be thus successively admitted by the lower extremity of the barometer, and the temperature of the vessel suspended in the longer arm of the barometer, above the level of the mercury in the basin; care being had to allow for any variation in the capacity of the receiver, arising from alteration in the level of the mercury in the basin, and likewise from the temperature of the vessel, the manometer immediately previous to the introduction of a fresh gas, arising from the impossibility of forming a perfect vacuum.

If an approximate vacuum be formed in the receiver containing the basin of the barometer, and a small quantity of any liquid be then introduced, it will be immediately converted into vapour, and the elastic tension of this vapour will be measured in precisely the same way as that of pot-manso gases. The recent introduction to science of the idea of the action of plants, the effect of which in increasing or diminishing the tension of the enclosed gas is then measured by the rise or fall of the mercury. If this manometer be transported from one place to another, where the temperature and pressure of the air vary, the length of the column of mercury corresponding to a given pressure of the enclosing gas, and the tension of the enclosed gas will be counterbalanced by a shorter column of mercury, and the vessel will remain at the upper and open at the lower extremity. The capacity having been accurately determined, it was filled with perfectly dry air of known density, and enclosed in a cylinder containing water, which was kept at a uniform temperature. An exact determined quantity of water (about 1.28 cubic feet) was added by means of a cock at the upper and open at the lower extremity. The capacity having been accurately determined, it was filled with perfectly dry air of known density, and enclosed in a cylinder containing water, which was kept at a uniform temperature. An exact determined quantity of water (about 1.28 cubic feet) was added by means of a cock at the upper and open at the lower extremity. The capacity having been accurately determined, it was filled with perfectly dry air of known density, and enclosed in a cylinder containing water, which was kept at a uniform temperature. An exact determined quantity of water (about 1.28 cubic feet) was added by means of a cock at the upper and open at the lower extremity. The capacity having been accurately determined, it was filled with perfectly dry air of known density, and enclosed in a cylinder containing water, which was kept at a uniform temperature. An exact determined quantity of water (about 1.28 cubic feet) was added by means of a cock at the upper and open at the lower extremity.
The term "manor" is commonly used to describe a large estate, including both land and its buildings. A manor could encompass a variety of properties, and its boundaries were not always fixed, making it a flexible concept. The manor was a significant unit of land tenure in feudal England, where the lord had certain rights and powers over the tenants who held land within the manor. These rights were established by custom and law and were enforced through the courts.

1. Nature and incidents of Manors. A manor is commonly said to consist of demesnes and services. It is usually, but perhaps more correctly, stated by Fulbeck, that these "are the material causes of a manor." Though there can be no manor without the one or the other of the above-mentioned causes, other things may also be members and parcel of a manor.

2. The services of a manor are, the rents, and other services, due from freehold tenants holding of the manor. These services are annexed or appertaining to the seigniory over the lands held by such tenants. The lands held by the freeholders of the manor are held of the manor, but are not within, or parcel of, the manor, though within the lord's fee, or manorial seigniory.

Copiesholds, being part of the demesnes, are not held of the manor, which has a manorial court or courts for the purpose of the manor and the fees of the lord.

The domain lands, antiently known by the denomination of vassalories, though held of the manor and within the seigniory (or, as it was usually termed, within the fee) of the lord, were not considered as part of manor; but the services accruing from such domain lands were part of the manor and essential to its existence.

Afterwards it was sufficient if the site of a manor at which the services had been reserved, or, as it was called, the site of the manor, formed part of the demesnes; at this period the origin of the name of the estate was dispensed with, and if the lord retained any portion of the land, so that there would be some demesnes to which the seigniory over the freehold tenants of the manor, and services due from them, could be appertained, the compound estate called a manor was not dissolved, whether it could be shown that a manor had ever stood on the part of the demesnes or lands retained, or not, and even if the lord had aliened and severed from his demesnes and services the manor to which they belonged.

II. Nature and Incidents of Manors. The name of a manor is commonly said to consist of demesnes and services. It is usually, but perhaps more correctly, stated by Fulbeck, that these "are the material causes of a manor." Though there can be no manor without the one or the other of the above-mentioned causes, other things may also be members and parcel of a manor.

The demesnes are those lands within the manor, of which the lord is seised, i.e. of which he has the freehold, whether they are in his own occupation or in that of his tenants. It is not necessary that the manor should have either a common-law holding, estate, or parcel within the ambit of the lessor and of the leases, or a customary estate, holding at the will of the lord according to the custom of the manor. [Copyhold.] The tenancy for years of lands within a manor may be held by the tenant, usually in a manor, though in the assessable manors, parcel of the duchy of Cornwall, customary estates for years still subsist (VIII.); and where a copyholder surrenders for years, the surrender becomes a customary tenant for years of the portion of the demesne so surrendered.

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The demesne lands were formerly called the inland, and the tenemental lands, the outland, of the manor.

3. But though a perfect legal manor cannot exist without demesnes and services, other incorporeal hereditaments, which may be regarded as part of the manor, include also vassalories, rights of common, rights of way, &c., and, under peculiar circumstances, even rents-seek and rents-charge.

In general, the power of holding courts of justice, whether for the decision of criminal matters or for the determination of civil matters, is exercised only by the lord of the manor. The court of justice has no authority over property obtained from the crown, either by actual grant or by prescription; and in order to prevent usurpation of such a power, the crown may at any time issue process for the purpose of instituting an inquiry as to how authority (Quo warranto) a subject holds a court of justice. But it is a distinguishing feature of the feudal system, to make civil jurisdiction necessarily, and criminal jurisdiction ordinarily, coextensive with tenure. Upon this principle there is inapplicable incident to every manor a court of justice (curia baronii), and, as being a court in the lands of the lord, it is subject to his authority, but in which the lord, by himself, or more commonly by his steward, presides. The jurisdiction of the court-baron extends over all personal actions in which the debt or damages sought or recovered are personal actions, and real actions in which the lands held of the manor could not, as being in any other court, except upon an allegation that the lord of the manor had in the particular instance granted or abandoned his court to the king (qua dominus remissa curia), to a quo warranto therefore holding a court-baron, it is a sufficient answer—that the defendant has a manor. As this court was essential to the due administration of justice in questions respecting the right of property held of the manor arising amongst the lord's tenants, there could not be a perfect manor without a substantial number of freeholders to constitute the court-baron, which number must consist of three, or two at the least, those being necessary where the litigation was between two of the freeholders. The practice, which prevailed in France, &c., of suitors from the court of the lord, in order to make any sufficient number of freeholders to constitute a court, does not appear to have been adopted in England. 4. Some things are popularly supposed to be common to a manor; as for example, the ownership of wastes within the district over which the manor extends, is frequently called a "martial right," though the right and interest of the lord in wastes, over which to act of ownership can be shown to have been exercised by the lord, or as an interest, is, so to speak, in the lord, arising out of the circumstance of his being the present owner of the demesne lands, and the former owner of the tenemental lands which adjoin such wastes. The same presumption would arise in favor of any other owner of the land. It is also thought that manors in their original grants, both to their freeholders and to their copyhold tenants, usually reserved the waste lands, giving to the freeholders and copyholders merely rights of common over the wastes. Hence it arises that, in part of the manors, in proportion to their extent, commonly exist a much larger portion of wastes than other estates. From this cause, and from the circumstance of manors being generally large properties in the hands of the nobility and gentry, several statutes have been given to lords of manors power to inclose the common land, and grant it to the tenants at will, or for a term, and though there are now no manors unconnected with a manor, the customs of demising by the lord's rolls appears in many cases to have formerly been common to every lord or freeholder who had demesne and copyhold lands which were held in gross.

Copiesholds are a common incident to the demesnes of a manor, but there are many manors in which this species of tenure does not appear to have ever existed, and many more in which it has been long since extinguished. But in many cases, are now no manors unconnected with a manor, the customs of demising by the lord's rolls appears in many cases to have formerly been common to every lord or freeholder who had demesne and copyhold lands which were held in gross.

The right to have a court leet at a royalty [Leet], under which the grantees hold a court of criminal jurisdiction in the king's name, over the remains (residents) within a particular district. This privilege may be granted to persons who are not lords of manors, and who are held, or to be held, of the grantor in such a manor, with all the rights of the manor and of the lord's fee, not always co-extensive.

Confusion often arises in the use of the terms "within the manor," or "within the fee and seigniory of the manor," and "within the ambit of the manor," the first of these terms usually meaning, or attempting to apply to lands &c., in the actual possession of the lord, or of the freeholders or copyholders; the second, lands which have been formerly in the manor were, before the statute of Quia Emptores, or De Praerogativi Regis, granted to the lord, or to the tenant of the grantor in fee, and the manor term "within the ambit of the manor" is applied to lands, which though surrounded by the manor, is neither parcel of the manor nor held of the manor; land which never was connected with the manor in point of tenure, or which, having been formerly within the manor, has been in some way alienated from it in fee.

III. Manors, how created. Since the statutes of Quia Emptores and De Praerogativi Regis no manors have probably been created, and it has been commonly said that no manors could be created after the statute of Elizabeth, the abolition of military tenures. Besides, the statute of De Praerogativi Regis we find an express exception in favor of alienations made with the licence of the king. It seems to be questionable whether, even by the common law, the immediate tenant of the crown deed
M A N

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M A N

It has been said that the king cannot at this day create a manor. From the nature of this species of estate it is obvious that the king never could create a manor. If the crown granted land to A, he might, with the licence of the crown, be enabled to retain the mansion, or to hold the lands himself, or to be the tenant of the manor, or tenant in chief, holding under the crown, but the crown itself would not be the owner, nor would there be a tenement charged as if it were a manor or manors.

IV. Manors, how destroyed.—A manor is not destroyed by the loss of those incidents which, though members, and forming part, of the manor, are, like demesnes and services, the 'material causes of a manor.' Nor will the legal existence of the manor be affected by the alienation of part of the demesnes, or of the services, or by the extinction of all the copyholds. But upon the alienation of all the demesnes, or the alienation or extinction of all the services, the manor ceases, and is said to be destroyed; and though any part of the demesnes or services may be retained in the hands of their possessors, if there be sufficient services, it can exist no longer than whilst there can be found enough freehold tenants to constitute a court-baron. Thus if the lord purchase the lands of all his freehold tenants, or of all except one, or if he purchase the lands himself, or if he alienates all the services, the manor ceases to exist. So, if the lord alien the freehold of all lands held by him by copy of court-roll, or enfranchise all the copyholders, in a manor where there are no demesnes except the copyholds. So, if he alienate all the freehold tenants, or all the tenements of the demesnes are allotted to one and the services to another. But in none of these cases is the destruction of the manor absolute and irrevocable. If there cease to be any demesnes, so that the manor is turned into a seigniory in gross, yet the manor itself is not destroyed, so that if the manor, coming to the lord by escheat or purchase, the lands so escheated or purchased will become demesnes of the manor, as they were, before the subinfeudation of those lands, whereby they were originally severed from the services, the manor ceases to exist. Where a manor is destroyed by partition between co-parceners, if one die, and the other takes the share of the party dying as heir, the manor revives; but it would not be so in the case of a partition between co-parceners, whereby the whole manor revives in the case of co-parceners if the severed portion of the manor were re-united, not by descent, but by purchase. Where all the freehold tenants have ceased to exist except one, there is no longer a complete legal manor, though the manor might be said to continue to exist because the tenant convey his tenement in fee to different persons in severality, as there will be now a sufficient number of freeholders holding of the manor, to constitute a court-baron, the manor will revive. But without such revival, the estate is by some lawyers considered to be still entitled to the designation of a manor, by reason of there being demesnes and a seigniory appendant, though over one tenant only. (1 Anderson, 257.) Such an estate is however more frequently called 'a manor by reputation,' a vague term, applied indiscriminately to all estates which have been manors, and which indeed would be equally applicable to a property which had acquired the name of a manor without having ever been one.

If the lord of a manor make a gift in tail, or a lease for life, of all the demesnes, this is such a severance and alienation of the demesnes from the manor, that there will, during the continuance of the particular manor, be no demesnes within the manor. Whilst the estate tail, or the estate for life, continues, the services of the tenant, or tenant for life, are still due; but the reversionist, being merely a reversion, and the determination of such estate, will be parcel of the manor, but the land itself will be held of the manor, and will not be parcel of the manor. Instead of demesnes, and services, the lord will, for the time, have merely two classes of services, viz. those of the enfranchised tenant, or tenants, and those of the freeholders in fee. During the continuance of this state of things the manor will be in suspense, and the lord will have, not a manor, but a double seigniory in gross, or rather two conjoint seigniories, one in respect of the enfralises, or lessees for life, the other in respect of the antient freehold tenants of the manor in fee.

V. Manors, Customary.—So much importance formerly attached to the possession of a principal mansion at which the services of tenants might be rendered, that a person retaining the manor, or manors, which his ancestor held, was called a 'customary.' Though a manor sometimes loosely called a customary manor.
La Couture has been converted into the prefect's lounge in it are occupied by a public library of 40,000 or 50,000 volumes, and 700 MSS., a museum of natural history. It is a collection of paintings. The town-hall is built on the site of the former palace of the counts of Le Mans, which were seized by the king of France in 1526 and converted into a hospital of the builders, of which there are yet some remains. The court-house is well land out, and there is a theatre. The houses in the town are chiefly built of stone, and covered with slate.

The population in 1831 was 19,672 town, 19,792 free communes, in 1836 it amounted to 22,000 for the commune. There are considerable manufacturers of woollens, cottons and linens, hosiery, lace, wax candles, and soft soap. There are bleaching establishments for linen and wax, tan-yards, curing-shops, paper-mills, and breweries. Considerable trade is carried on by the town with the countries round it.

The cultural produce of the neighbourhood, including eukh, walnuts, dried fruits, fat fowls, which are sent to Paris, and trefoil seed, is sent to Russia, Sweden, and England. The weekly cattle-market is well attended; and there are two fairs yearly in the Place Royale. They are comprised for the surrounding country. There are good inns, coffee-houses, reading-rooms, and public baths.

There are several fiscal and judicial government offices. There is a seminary, a high school, a school of agriculture, sciences, and arts, and a school of letters. There is a good painting, drawing, an hospital, and some other charities. It is the seat of a bishopric, the diocese of which includes the department and that of Mayenne: the bishop is a suffragan of the Archbishop of Tours.

The arrangement of Le Mans comprehends ten counties or districts, each under a justice of the peace, and 115 communes. The area of it is 734 square miles. The population in 1831 was 157,951; in 1836, 164,647.

MANSARD, the name of two French architects of great celebrity in the seventeenth century. François Mansard, the elder, whose father, Absalon, is said to have been architect to the king, or at least a builder in the royal service, was born at Paris in 1636. At the age of twenty years he was employed to execute the plan of the Hotel Toulouse; and a short time afterwards he was commissioned to execute the plan of the church of the Feuillans, in the Rue St. Honoré. The reputation acquired by these works soon procured him abundant employment, and Obazine Mansard is ably his name, and has been admired as exhibiting the solution of a knotty problem, the metopes being perfect squares throughout. Such was the puerile and pedantic trifling that formerly engaged the attention of architects and connoisseurs, and for the sake of which they were subjected to that somewhat greater importance in architectural taste and design.

François died in 1686. This architect is said to have been the inventor of the curb roof, called, after him, a Mansard, which consists of two planes on each side, a steep one below and a flatter one above. It has for the beauty of form to recommend it, having very much the air of being broken or doubled.

MANSARD, JULES HARDON (1818-1900), was the nephew of the above, being the son of a painter who had married the sister of François. Jules Mansard was born at Rennes on 1 March 1818. He was brought up by François to his own profession, in which he afterwards so greatly distinguished himself as to climb the much celebrated ladder at the time. Most assuredly he had ample and correct display of his talents, since, had he been employed on no other work, he was called to execute one which for lavish profligacy has hardly its parallel in any age or country. It be...
cally quite so much a satire as a eulogy on his genius' to say that on that occasion, and with unlimited resources, he produced nothing better than Versailles—a huge pile of building, which our own eminent architect Sir C. Wren described as composed of 'heaps of littleness.' Even his best known work, the Quai de Quinche through the three French states, to impress us with a high idea of his talents, is obliged to admit that his designs display 'una certa mediocrité dé gout,' to which he might have added, a mediocrity of ideas also. It would not be difficult to select from his works numerous instances of overbearing, overflorid caprices, and downright solemnisms. Undoubtedly the magnitude and the costliness of their decorations give them an imposing air, but the effect thus produced is not to be ascribed to the architect himself—at least he must consent to shelve his manner. In the case of Versailles, the work which has chiefly contributed to his reputation is the dome of the Invalides at Paris, which, although as splendid as a coat of gilding can make it, is externally greatly inferior to that of our St. Paul's in harmony and majesty of design and proportion. The interior of the edifice presents far more that deserves commendation, the whole being most skilfully arranged for perspective effect. Both the Place Louis XIV. and the Place de Vicomte of Paris were conducted by his designs, but have little at all remarkable, except it be that the one is an octagon, and the other an oval in plan.

With abundance of most lucrative employment, and enjoying the personal favour of a monarch who was uniformly lavish to himself and house, and to the administators who bestowed upon him, it is no wonder that Jules Har- douin was enabled to amass a vast fortune. He died suddenly at Marly in 1768, in his sixty-third year, and was buried in the church of St. Paul, at Paris, where a monument was erected to him, executed by the sculptor Coysevox.

MANSFIELD, a market-town and parish in the northern division of Buxton wapentake, in the county of Nottingham. The population of the parish in 1851 was 9426. The town is a salubrious one, and possesses a large market, a weekly market being held on Saturday, at which it is said to be worth 30,000l., connecting Mansfield with the Cromford canal, which is said to have proved very advantageous to the trading interests of the place. There are some extensive cotton-mills, besides manufactories of hosiery and lace. The numerous inns and large cattle-fairs, or fairs, held there on the 5th of April, 10th of July, and the second Thursday in October. The free grammar-school was founded by royal charter in the third year of the reign of Queen Elizabeth, who also established two scholarships of 10l. each at Jesus College, Cambridge, for scholars from that school. The insufficiency state into which this school had been allowed to fall was a subject of general complaint among the inhabitants as recently as the year 1832. According to the charter of foundation, the salaries of the master and usher were all paid out of the produce of the church lands, which it is de-clared shall be distributed in the proportion of two-thirds to the vicar, two-ninths to the master, and the remaining one-ninth to the usher; and it appears that the master's share amounted to 11l. 6s. 8d. in 1832, when the number of scholars, including eight boarders, was twenty-seven.

In 1725 Faith Clarkson bequeathed 2000l. part of which she directed should be appropriated to the erection of a charity-school in Mansfield, and the remainder invested in land. In 1724, a sum of 1000l. was paid out of the chancery in 1743 it was ordered that a portion of the rent of these lands should be applied to the maintenance of a master and mistress to instruct twenty poor boys and the like number of girls, in reading, writing, and arithmetic; the number of scholars was increased in 1829, when there was a demand, and apprenticing a certain number of the boys.

Appreciation information as to the grammar-school and the other charitable institutions of Mansfield, in the Twenty-fifth Report of the Charity Commissioners, and in the second volume of Throsby's edition of Thornton's History of Nottinghamsire, 4to, 1872.

In the neighbourhood of Mansfield-Woodhouse, a village about a mile and a half from the town of Mansfield, two Roman villas were discovered by Mr. Roeke in 1786; and the vicinities of Mansfield numerous coins of the emperors Vespasian, Constantine, Caracalla, Diocletian, and Marcus Aurelius have been found at different times.

(Horrid's Hist. and Antiquities of Mansfield, 4to, 1801; and Parliamentary Papers.)
MANSFIELD, and he was entrusted by his king with full power to negotiate on the subject of a new administration with Mr. Pitt and the Duke of Newcastle. The same reasons which made him refuse political office seem to have induced him to decline the custody of the great seal when it was, upon more than one occasion, offered to him. He preferred the purely judicial office of chief-justice of the king's bench, which he held from 1800 to 1804, to that of chief-solicitor, in which he might have enjoyed the full sense of the position, which they produce. Yet in that office, though safe from political, he was not safe from popular storms. His political leanings were not towards the popular side; and even his conduct as a judge, though now, when at a distance, his actions in the House of Lords will be judged—since the appearance of some bias against popular rights. The following passage, from the journal of Lord Mansfield, the opinion on the subject of seeking popularity, for which he always entertained a great contempt. 'It has been said by a noble lord on my left hand, that I likewise am running the race of popularity. If the noble lord means by popularity that applause bestowed by and much on good and virtuous actions, I have long been struggling in that race, to what purpose all-trying time can alone determine; but if the noble lord means that mushroom popularity which is raised without merit and lost without a crime, he is much more correct, and with the whole of the House I defy to judge the most contemptible idea in the whole of a single action in my life, where the popularity of the times ever had the smallest influence on my determinations. I thank God, I have a more permanent and steady rule for my conduct—the dictates of my own heart. Those that have not experienced the distressing solitude of minds to be the slaves of every popular impulse, I sincerely pity; I pity them still more, if their vanity leads them to mistake the shouts of a mob for the trumpet of fame. Experience might inform them, that many, who have been satisfied with the fame of a crowd, have ruined their excursions the next; and many who, by the popularity of their times, have been held up as spotless patriots, have nevertheless appeared upon the historian's page, when truth has triumphed over delusion, the assassins of liberty. With me, the noble lord can think that I am ambitious of present popularity, that relic of folly and shadow of renown, I am at a loss to determine. (Parl. Hist., vol. xvi., p. 977.)

In the cases of the trials of the publishers of John's letter to the king, Lord Mansfield incurred much popular odium by laying down the doctrine that the fact, not the law, was what the jury had to consider. In the trial of Woodfall, Lord Mansfield, in his summing up, directed the jury, 'that the printing and sense of the paper were alone what the jury had to consider of.' (State Trials, vol. xxxvii., p. 5.)

In the case of Wilkes, which occurred in the same year, Lord Mansfield remained firm to his former opinion, and in allusion to the odium which he had incurred in consequence, told his counsel, 'I have a reason for what I do, and for the people; but many things, acquired by the favour of either, are, in my account, not worth ambition. I wish popularity, but it is that popularity which follows, not that which is run after. It is that popularity which, sooner or later, never fails to do justice to the pursuit of noble ends by noble means. I will not do that which my conscience tells me is wrong, upon this occasion, to gain the huzzas of thousands, or the daily praise of all the papers which come from the press: I will not avoid doing what I think right, and I will draw out every man, every friend, every relative, all that falsehood and malice can invent, or the crudity of a deluded populace can swallow. I can say with a great magistrate, upon an occasion and under circumstances not unlike, "Ego hae animo semper futi, ut vindicam memores meos in omnibus.""

In the famous riots of 1780, Lord Mansfield's house in Bloomsbury Square was attacked and set fire to by the populace. The walls were all that were left of it. His library of books and MSS., his private papers, sculpture, furniture, and other valuables were all consumed. Though through the treasury, in pursuance of a vote of the House of Commons, applied for the particular and amount of his loss, with a view to compensation, his lordship declined returning any account of his loss, lest, he thought, it should imply a letter to the Treasury, 'it might seem claim or expectation of being indemnified.'

After having presided for upwards of 32 years in the court of king's bench, he retired from his office in 1779. He died on the 30th of March, 1793, in the 86th year of his age. The stipu-
MANTELLIA, a generic name proposed by Parkinson (Org. Remains) for certain acrocyoniform fossils of the chalk. M. Bronniiari has established the use of this word for certain cycadiform plants, to which Dr. Buckland has applied the title of Cycadeoidae. The specimens are chiefly found in the solitie of the Isle of Portland, but one (M. cylindrica) occurs in the isles of Lundy, according to M. Volta. The stem of these plants is cylindrical or spheroidal, and covered with transverse impressions of leaf bases. The internal structure resembles Cycas. (Buckland, in Geol. Trans., 1828."

MANTES. [Skene, Watson.] MANTIDES, a family of orthopterous insects, the species of which may be distinguished by the following characters:—Head exposed (not hidden by the thorax), furnished with three ocelli, or simple eyes, beside the ordinary pair of compound eyes; palpi short, slender, and cylindrical; antennae generally setaceous, but sometimes pectinated; short in the females and long in the males; body elongated; the thorax usually very long, often dilated at the sides and dentate; abdomen long, and with the terminal segment small in the male sex, more or less dilated, and with this terminal segment large in the females; the apex furnished with two small appendages; legs long; the four posterior legs slender, the anterior legs with the coxae very large and elongated; the femora also very large, dilated, and furnished with a double series of spines on the under side, between which (when the animal is in a state of repose) the tibiae are placed; the tibiae are rather short, armed with spines, and having a strong spine at the apex, which is recurved; tarsi usually five-jointed, but in some species the posterior tarsi have only three joints; wings horizontally folded when at rest.

The principal genera contained in this family are:—Heteromantis, Eremiaphila, and Mantis. The species of the first of these three genera are readily distinguished by there being only three joints to the posterior tarsi, there being five joints to the tarsi in all the species comprised in the remaining two genera; in the genus Eremiaphila, the palpi are obtusely pointed, and the head is partially enveloped in the thorax; the two posterior pairs of legs are long and slender, and the tibias are sometimes terminated by a small spine; the penultimate segment of the abdomen is furnished with two spines in the females. The elytra and wings are always very short. The genus Mantis (as now restricted) is distinguished from the last by the head being free, the palpi very slender and almost pointed, and the wings as long as the body, or nearly so; the penultimate segment of the abdomen is never furnished with spines.
with a rubble of broken stones mixed with mortar; the inner lining was 2 feet thick, the outer 4 feet — total 10 feet. The form of the city was slightly elliptical, and about equal to a circle of 1250 yards in diameter. The city was surrounded by a well-dug moat, from which I reckoned right, is 118, the curtails are generally about 80 feet long, the towers 23 feet in the face and 13 in the flanks. There are ten gates, the approach to which was carefully defended. The entire circuit of the walls is protected by a wet ditch, formed by a small stream, which flows from the east, and, embracing the city so as to make it an island, flows westward from the opposite extremity. {Travels in the Morea, i. p. 103-105.}

MANTOVA, DELEGAZIONE DI, a province of the Lombardo-Venetian kingdom, bounded on the east by Verona and Rovigo, on the north by Brescia and the southern bank of the lake of Garda, on the west by Brescia and Cremona, and on the south by the duchies of Modona and Parma. The province of Mantova is entirely in the great plain of Lombardy, and forms part of the basin of the Po. It extends on both banks of that river, a part, though only a small one, lying on the south bank. The other rivers of the territory of Mantova are the Mincio and the Oglio, both affluent of the Po. The Mincio issues out of the lake of Garda at Peschiera, and for about ten miles marks the limits between Verona and Mantova, after which it flows across the territory of the latter, forms the lagoon in the midst of which stands the city of Mantua, and then enters the Po below Genufriolo. The length of the province is about 68 miles; its breadth is about 12 miles; its area is about 32 miles: the population, in 1837, was 257,334, distributed in 17 districts, 13 of which are north of the Po, viz. Mantova, Osigliano, Roverella, Villa, Castiglione dello Stiviero, Castelgordeno, Asola, Cannato, Morgora, Borgo-Forno, Medole, Mulini, and Bovara; 4 south of the Po, namely, Gonzaga, Revere, Sermide, and Suzza. There is no town of any importance except the capital.

The territory of Mantova is noted for its fertility. It contains numerous fine meadows well adapted for the grazing of cattle, and several navigable canals; vines and mulberry-trees also abound. Land property is very valuable in this district, which labours however under two disadvantages, namely, the danger of the inundations of the Po, to prevent which the dykes and gates are kept in constant repair at a great expense, and the wholesomeness of the air in summer.

MANTOVA (or MANTUA), the Town of, is on an island about five miles in circumference, in the middle of a lagoon formed by the Mincio, and is joined to the mainland by a narrow causeway of which the length is about a mile and a half. The town and its approaches are regularly fortified, and it is considered the strongest fortress of Italy. The town is well built, with wide streets and squares, and contains many handsome structures. The principal buildings are the cruiser Palazzo and many splendid churches, and the excellent paintings, chiefly by pupils of Giulio Romano. 2. The church of St. Andrea, raised by the architect Leon Battista Alberti, of Florence, and adorned with paintings by Giulio Romano and his pupils, and with the mausoleums of several distinguished persons, the Gonzaga Mantega, the sculpture Spérando, the botanist Donato, the poet Callimachus, the philosopher Pomponio, and other illustrious Mantuans. Giulio Romano himself, who, as painter, architect, and engineer, has left few monuments of his art, is buried in the church of St. Bartolomeo, but the tombstone, with the inscription over his grave, has been obliterated in recon structing the church. The house of Giulio Romano, built by himself, is still standing. 3. The church of Santa Barbara, rich in paintings. 4. The public library and museum: the sculpture gallery, although little noticed, is next in value to those of Rome, Florence, and Naples; the library contains 80,000 printed volumes and many MSS. 5. The ducal palace, an old, vast, irregular structure, partly rebuilt by Giulio Romano, with some good paintings, which have been removed to the bod and Mdps from the buildings which Mantua has undergone. The portraits of the ancient dukes of Mantua were bespattered with lime in 1797 by the political fanatics of that time, who testified in this manner their hatred of princes. 6. The gates and bridges of Mantua, and the fine statuary del Maggiore. 7. A palace outside of the town, called * di T,* because some say it is built somewhat in the shape of that letter, whilst others pretend that the name is derived from the dialect word * jeto,* which means a drain for the rain waters with which the ground was encumbered. The structure was originally intended for stables for the horses Gonzaga, but under the direction of Giulio Romano it was converted into the second Court of the city, and in 1586 painted the apartments, one of which is called the Hall of the Giants, and contains a representation of the defeat of that mythological race by Jupiter.

Two miles from Mantua is the village of Pictola, where a vagrant tradition reports to be the end of Jupiter. The dukes of Mantua had a palace here, called La Virgiliana, which still exists, though much dilapidated.

The town of Mantua contains about 25,000 inhabitants, independent of the garrison. It is a bishopric, has a cathedral and a gymnasium. In 1533 the provinces contained one hundred and fifty-six elementary schools for male children, and ninety-seven for females. (Serratoris, Saggio Statistico.) The Jews, who are several thousand in number in Mantua, have their own schools and a house of industry supported by themselves.

The origin of Mantua is lost in the obscurity of the ante-Roman times. Virgil (En. x, 201) boasts of its European origin, its former power, and says it was inhabited by three different races; and Piny the elder (vi) observes that it was the only relic of the Transpadane Etruscans, from whom it passed into the power of the Cenomani Gauls, and afterwards became subject to Rome with the rest of Cispal Gaul.

After the fall of the Western empire it was successively subject to the Goths, the Lombards, the Franks, and the German emperors. In the twelfth century it asserted its freedom as an independent municipality, like the other Lombard cities, but afterwards became subject to various tyrants or usurpers. The remaining history of Mantua is given under the name of the south of Mantua.

MANTU. [Lombardy; Mantova.]

MANU (a word which implies 'rational,' from * man, to 'understand'), according to a judicious Hindu scte, was the son or grandson of the creating deity Brahman, the first God who had been generated. The essential features of the * Manu* are chiefly kept up by its pupils, and are contained in * Manu* or * Manu* (or * Manu*), who is the son of the god * Manu.* To this primeval sage, the father of the human race, and consequently their patriarchal ruler and legislator, is ascribed a celebrated system of religious and civil law, which in the beginning of time was revealed to him by Brahma, and has been handed down by tradition to the present age. In other words, the Sanskrit work now extant, and indiscriminately called * Smriti* (tradition), or * Manu* (or * Manu*), is deemed by the Hindus not only the code of the law, but also a kind of history or such, and contains a wealth of facts. The book is divided into the twelve following chapters: i. On the creation; ii. On education, or on the first order; iii. On marriage, or on the second order; iv. On diet, and private morals; v. On diet, purification, and women; vi. On devotion, or on the third and fourth orders; vii. On government, or on the military class; viii. On justice, and on law, private and criminal; ix. On the commercial and service classes; x. On the mixed classes, and on the inferior classes; xi. On transmigration and final beatitude.

We shall not dwell on the first or last chapter; the first is occupied with a summary of the contents of the * Manu* code, and with a proof that the Hindu system is the wild and fanciful conceptions of Hindu metaphysics and natural philosophy; the twelfth chapter contains a detailed system of metempsychosis and final punishments, connected with the institutes of temporal law. It is however not clear whether the * Manu* code has been neglected, or what is more probable, the monarchical and civil laws (xi-xii) have purposely been separated from the general duties contained in the first half of the work. These for the most part are of a religious character, and have been often quoted by the Hindu scholars, and therefore totally dependent upon the hierarchical rules of the first order, by which even the minutest actions of the inferior classes are invariably to be regulated. Witness

...
entering into the mass of forms ityes and customs by which the main structure of the Brahminical, and in fact of every hierarchy is largely cemented, and into those generally absorbed and often ridiculous ceremonies inculcated upon the different branches of society, it will be sufficient to remark that they were evidently congenial to the religious prejudices, and to the habits and disposition of the Hindus, and that most of them had long been sanctioned when the sacred codes, having been sprung from the human mind, and not by the author himself, who professes to give the system of law in its full extent, and the immemorial customs of the four classes, adding that immemorial custom is transcendent law, approved in sacred scripture, and that holy sages have enlisted through the sacred precepts, so that the ancestral duties of the four classes in general are stated as follows:

To the first, or sacerdotal order, the supreme ruler assigned the duty of reading the Vedas, and of teaching it; of giving advice to kings, of sacrificing and of assisting others to sacrifice, of offering alms and of receiving gifts of promoting justice on earth, and of procuring happiness hereafter; in short, a Brahmin must ever be intent on divine worship, devotion, austerity, and abstinence. It is only in case of need that he is allowed to support himself by tillage or by the science of medicine; but if, by right of birth, he might be the chief of the whole creation, and, whether learned or ignorant, must be revered as a powerful divinity, nevertheless he should constantly shun worldly honour, and rather seek to be despised.

The Kshatriya, or military class, is bound to defend the people, to read the Vedas, to sacrifice and to give alms; the Vaishya caste to cultivate land, to keep herds and flocks of cattle, to carry on trade, to lend at interest, to sacrifice, to read the scriptures, and to bestow presents. The business of the fourth, or Sudra class, is only to serve the three upper orders, and chiefly the Brahmins.

Now in these four classes, which may be called the pillars of Hindu society, those only who are born of wives equal in caste to their fathers are admitted into them, and they are the only persons who are allowed to marry, to own property, to hold land, to engage in manufacture or commerce, or in any other occupation. They may not offend against the laws of the caste, and the justification of these laws is given in the Vedas. The Punishments, consisting of pecuniary fines and confiscation of property, of mutilation of the body, and death, of exile and loss of caste (which is deemed moral death), are inflicted for the slightest breaches of the law. The first three are permanent, and the fourth is revocable, on the condition that, if possible, the whole property of the family should be kept together. Accordingly after the death of his father, the eldest son may take entire possession of the patrimony, and the others may live under him, unless they choose to separate. In some cases, therefore, the members of the lower castes are thereby left without the protection of the law; in the case of their dependants, mental and corporal defects are legally excluded from participation, being provided for, the heritage is divided into portions according to the minute and almost endless variety of regulations by which, owing to the real or imaginary inferiority of the lower castes, and the fact that it has become extremely abstruse and intricate. Property belonging to a sacerdotal student and to a minor must be guarded by the king, until the owner shall have concluded his studentship, or until his infancy shall have ceased in his thirteenth year; and in such cases, the sale of any man or slave shall be无效; while the giving or sale of a Sudra by a man of the sacerdotal class is exactly equivalent to the killing of a cat or dog, the murder of a Brahmin is an inexcusable crime, and he who, either directly or indirectly, attempts to be his possessor shall be put to death for about a century in a place of future punishment, which is described as 'a dark hell.'

With regard to the penal provisions of the criminal law we shall only observe that, in the primitive and mechanism of the Brahminical system, no crime has been sanctioned; for instance, whoever breaks a dam or sluice, by which an inundation would be caused (Buchanan, Myorea, i. 4), shall be drowned; an adulterer shall be burned on an iron bed; a cut-purse is to lose two fingers, and 'with whatever limb a chief commits the offence even that limb shall the king amputate' (v. 334; ix. 273, ff.). Nevertheless most of the punishments may be commuted for pecuniary fines; and in case a temporal chastisement proves unavailing, threats of future pain are often held out. A priest may by ministering impure and holy charms clasise those who injure him, without kicking the king. In short the first part of the sacred code is entirely what we should call hieratical. This character is apparent not only in its inflexible severity where religion and its ministers are concerned, and the well-calculated distinction of castes, by which a free intercourse between the members of society would be prevented, and consequently a more close dependence on the priesthood ensured, but also in the spirit of sublire decretum, of benevolence and tenderness to all sentient creatures, by which sacerdotal institutes are generally distinguished.

The second part of the code, containing the monarchical and civil laws, is more congenial to social order, and allows a great portion of the sacred precepts to be checked by rules of a sound policy and of regular administration. The king, born in the military class, is formed of particles drawn from the substance of the guardian deities; surpassing all mortals in glory, he is himself a divinity in a turn, with all the social and political advantages of all classes who discharge their duty (7, 4, 9, 301 ff.). He must invariably speak truth and never transgress the rule of strict justice; but as just punishment cannot be inflicted by an ignorant and covetous king, he has to learn the science of ethics, and to be instructed in the metaphysics and sublime theological truth from learned priests, and from the people the theory of agriculture, commerce, and other practical arts. Nothing is so often as to bring to a strong mind by a multitude of examples of kings in protecting the property of their subjects against fraud and violence. For this purpose the prince shall appoint a governor of one town with its district, another of ten towns, of twenty, of a hundred, and above all these inferior authorities, a high officer, whom we may perhaps call a lord-lieutenant, over each thousand towns. Also, to prevent the people being oppressed, a superintendent of all affairs shall be established in every large town to inspect the inferior officers. A large number of laws for the maintenance of order, for the regulation of business, for the purchase of marketable things, about weights and measures, tolls and freights for boats passing up and down rivers, the severe punishment of robbers and of those who will not restore loans and deposits, and the most subtle definitions of the crimes of forgery, theft in public buildings, and of those crimes, which are the most grievous, and which are ever restricted by the rules of caste the social and personal condition of an individual might be, his property at least was respected and held inviolable. As to the laws of succession, it is laid down as a fundamental rule, that property is derived from the father, and the son, being of the same caste, has the advantage; and that among the lower castes this advantage is greater. In general an infringement of the law of caste is treated with severity as an absurd and intricate.

(7, 10, 118 ff.) Selling men, artisans, taxes, but not the wealth of the country is the only means to assist by their labour when needed. According to a theory most rigorously supported in a rude state of feudal and despotic government, by several Hindu lawgivers of modern times, and even by a passage in Strabo, the king has been declared sole possessor of the soil (Strabo, p. 490; Strabo, p. 1030, I. 4, and the same passage). But although the sovereign's right to an annual ground-rent, and his gifts of land, so often recorded in inscriptions and written documents, may originally have been founded on such a theory, its practical application was at the present time ineffectual, and in fact it is nowhere adopted nor even men-
tioned by the sacred code. On the contrary, it is expressly stated a rule laid down by ancient sages, that cultivated land shall be the property of him who has cut away the wood, or who has cleared and tilled it (9, 44). To prove the inviolability of the tenure of land, in which the proprietor is rather protected than limited by government, many special laws might be produced, such as those concerning landmarks and boundaries, the common ponds by which the fields are watered, the punishment inflicted on herdsmen and owners for transgressions. When a man, who was so far in the council from being disturbed in his possession, that even if land be injured by his neglect, he shall only be punished by a heavier tax.

The most striking feature by which, on the whole and many things, though many glaring defects, this code is distinguished, is the rigour and purity of its morals. A complete system of ethics might be gathered from the scattered moral sentences, of which we subjoin the following few examples. "Let not a man be querulous, even though in pain; let him not injure one another, as he thought has not even uttered a word by which his fellow-creature may suffer uneasiness (2, 161). Let him bear a reproachful speech with patience; let him speak reproachfully to no man; with an angry man let him not in return be angry; abused, let him suffer patiently, but let him say what is pleasing; let him speak no disagreeable truth, nor let him speak agreeable falsehood (4, 138 ff.)." Though oppressed by penury, in consequence of his righteous dealings, let him never give his goods. 'He who is greatly affected by the monies of religion (4, 204); he should act without any view of reward, and constantly shun religious hypocrisy, for he who describes himself to worthy men in a manner contrary to truth is the most sinful wretch in the world; he is the worst of thieves, a stealer of Simultaneous lawful and unlawful money below an unjust man attains no felicity, nor he whose wealth proceeds from giving false evidence; for the soul itself is its own witness: offend not thy soul, the supreme internal witness of men. The soul have said in their hands. No man has a distinguishing mark, and so does the spirit within their breasts (4, 170, 84).

He who perseveres in good actions, in subduing his passions, in bestowing gifts, in gentleness of manner, who bears hardships patiently, who associates not with the man cut off by the gods, who is not seen being turned from the final beatitude (4, 246; 12, 10). Single is each man born, single he dies, single he receives the reward of his good, and single the punishment of his evil deeds. When he leaves his corpse, like a log or lump of clay on the ground, his knowledge only exists, his faces, his accents, his soul (4, 240)." The principal moral duties in general are summed up in the following passage: "The avoiding of all injury to animals being, veracity, the abstaining from theft, and of property, cleanliness and command over the bodily organs; and the compunctious system of duty, which Manu has ordained for the four classes (10, 63). To conclude with the words of Sir William Jones: "The work contains abundance of curious matter, extremely interesting both to speculative lawyers and anxious to fix the boundaries, with many beauties which need not be pointed out, and with many blemishes which cannot be justified or palliated; it is a system of despotism and priesthood, both indeed limited by law, but artfully conspiring to give mutual assurance.

The time at which the laws of Manu were composed is wholly uncertain, and it was only from conjecture that the eminent Sanskrit scholar whom we have just named fixed the twelfth century a.c. as the probable epoch of their composition. The original or primitive work was the code of an already refined and enlightened people, and the work itself bears ample testimony that a very advanced degree of civilization had been acquired by the Hindudes very early, in which the religious considerations would be required. And as a Sudra deciding causes of law, and even a Sudra-king, are mentioned (4, 61; 8, 21), and as king Venas is censured for having given rise to a considerable number of cases (2, 66), it would seem that the order of things was then nearly the same as in modern times, in which, according to the remark of a judicious observer, every profession, with few exceptions, is open to every description of persons, and the discouragement arising from religious prejudices is not greater than what exists in Great Britain, and in the laws of modern and corporation laws." (Colebrooke, Remarks on the Pandects, 1795, p. 174; Ricard's India, or Facts submitted to illustrate the Character and Condition of the Native Inhabitants of the Country. London, 1811, ch. 4.) They have made considerable progress: the Vedas are written, and must be read, with accents and letters well pronounced; heretical books are mentioned (2, 11), legal questions must be decided by arguments and rules drawn from local usage as stated in the edicts (8, 31)." The laws were by their frequency liable to forgery (9, 230).

After all, and what is most important, the burning of widows is totally unknown: on the contrary, a widow is legally bound to render herself as willing as possible to be married, even to the brother of her husband's brother, as she could marry any other man during the reign of King Vena (3, 173; 5, 157). Now the duties of a Satru, so minutely detailed in works of later date, could not possibly be omitted in a sacred code of law, and therefore the work seems at least anterior to the invasion of India by the Macedonians, who were fully acquainted with these horrid sacri-

The learned Hindus agree that many laws enacted by Manu were confirmed to the first three races of the world, and have no force in the present age; some of them have been abolished or modified by subsequent Hindu lawyers, according to whom the work is rather to be honoured than to be strictly followed. In fact for a long time it has formed the basis of the codes of the modern Hindudes, a work which might be considered as the oldest text-book of law extant, or as the Hindu 'Institutes,' preparatory to the copious 'Digests,' 'Pandects,' and other legal works now in use among the different juridical schools in India. (Ellis, in Madras Journal of Indian Literature, vol. ii. p. 223.) He was, according to the "Hindu Law," principally with reference to such portions of it as concern the Administration of Justice in the King's Courts in India, Lond. 1830.)

The Institutes of Hindu Law, or the 'Ordinances of Manu,' being a translation of the original from the Sanskrit of Sir William Jones, 1774. The Sanskrit text with the gloss of Kullukhabbata was published at Calcutta in 1813, and a new edition of the metrical text, with select notes and a French interpretation, by Loiseleur des Longchamps, was published at Strasburg in 1830.


MANUEL, NICLAUS, who claims notice not only as an artist, but as a poet and author, and one who took an active part in the Reformations in Switzerland, was born at Barten in 1484. His family name is conjectured by his recent biographer Dr. Grüneise, to have been Altenmann, but as he was illegitimate, it was, for family reasons, changed grammatically into that of Manuel. It is further conjectured that he was brought up by his maternal grandfather, Dr. Prickart, who as a choice preacher, professed to have studied the art at Colmar, under the successors of the celebrated Martin Schönh, under whom he was assistant Holbein, in 1515, in his 'Dance of Death'; yet this is very questionable, because he was himself employed at that time in painting the same subject at Bern, which he executed in fresco in the cloister of the Dominicans. He seems to have been one of those who had helped to represent Solomon worshipping idols. But of these and several other of his works nothing now remains except some water-colour copies preserved in the library at Basle. It seems however that his pencil did not bring him sufficient for the maintenance of his family, and he resolved to try to advance himself in military and public affairs. He served, as captain-major or commissary, among the Swiss allies who assisted Francis I. in his expeditions against Milan, 1522, and was present both at the storming of Novara and the battle of Biacco. In the following year
he was chosen landvoet of Erlach; and from the year 1596 distinguished himself by his zeal in the cause of the Reformation. From this period he was entirely devoted to that cause, and to his various public employments. He died in 1630, when only 46 years of age.

As a writer, he composed himself in 1590, by various popular poems and songs in the Swiss dialect, full of humour and sharp satire. His 'Fastnachtspiele,' or Dramatic Morals and Mysteries, which he began to compose about 1592, are marked by the same qualities, in which, as may be seen, his talent for which obtained him many admirers, and also some enemies and persecutors. His enemies accused him not only of entertaining exceedingly heretical opinions, but of quitting his contempt for the church, alleging against him his sympathies in favour of toleration, his kind remarks on the monks, and, not at least, of all his translation of Molière's 'Tartuffe.' Being summoned to appear before the Inquisition, instead of obeying the mandate of the Holy Office, he defied the agent sent to apprehend him, and saved himself from the state of flight in 1578; in which city he resided till February 25, 1819, when he died at the age of eighty-four.

Though a zealous cultivator of the purest models of Portuguese poetry, Manuel was one of the most adored of his land. His moral talent, which his contemporaries and his admirers recognized in him, is not at all a discredit to the age, but a credit to the stage of intellectual progress which it had reached. His verse was distinguished by its novelty and its charm; it was full of moral import, and its讽刺ical spirit was which made it so much admired, the more so as it was very sincere and unaffected. His language was simple, his diction pure and his style unadorned; his benevolence and tenderness were his most striking qualities.

Manuel, Francisco, one of the most eminent of the modern poets of Portugal, was born at Lisbon in 1734. His parents were of low degree, and his education was limited. He was taught the rudiments of literature by his tutor, and learned from his own reading the science of poetry, his talent for which obtained him many admirers, and also some enemies and persecutors. His enemies accused him not only of entertaining exceedingly heretical opinions, but of quitting his contempt for the church, alleging against him his sympathies in favour of toleration, his kind remarks on the monks, and, not at least, of all his translation of Molière's 'Tartuffe.' Being summoned to appear before the Inquisition, instead of obeying the mandate of the Holy Office, he defied the agent sent to apprehend him, and saved himself from the state of flight in 1578; in which city he resided till February 25, 1819, when he died at the age of eighty-four.

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Lime has been burnt with a peculiar effect upon all organic matter, which it burns or dissolves by taking from it a portion of the water and of the carbonic acid which it contains. On humus, which is the result of animal and vegetable decay, it has a peculiar power to reduce it to a state of solubility, and to render it soluble in water, and thus to fit it for the minute fibres of the roots of plants. This circumstance is probably the secret of all the wonderful effects of lime on certain soils, while it appears almost inactive in others. In some places, where the soil is peculiarly poor, being evidently a pure silicious sand washed by the sea or by rivers, lime is found to do no good; but on the rich alluvial clays, which contain much organic matter, it is the best of manures, both in a caustic and mild state.

Lime is peculiarly adapted to the half-decomposed fibres of vegetable matter, such as straw, heath, and the like; it helps their decomposition and accelerates it; by its means the dead fibres of the roots of vegetables, which remain in the earth for a long time, become decomposed and soluble; and these, and other materials, entering into new combinations, supply the materials for the various vegetable substances which are naturally produced. As long as there is a store of organic matter or humus in the soil, lime will be an excellent manure; as soon as it is exhausted, it will only add to the sterility by destroying every fibre which the seed might throw out from its own substance by the assistance of light and moisture. This will account for the various reports which have been made at different times of the effect of lime on different kinds of land. In some instances the quantity which might be safely used appeared almost unlimited, in others a very small portion exhausted the powers of the soil.

Agricultural experiments are seldom conducted with sufficient precision. The man of science in his study operates on a minute portion of soil, and his experiments on vegetation are carried on at best in a few feet of garden-ground. The farmer is occupied with too many things to mark the minute differences which affect his land. Lime has been found useful, and a good crop has been obtained by the abundant use of it, land is limed as often as can be done, with the same expectation of success. The man of science may be said of chalking and marling: if one application has done good, another, if it is supposed, will be beneficial. On the same principle the quack doctors pretend that their medicines not only cure the diseased, but should also be taken continually by persons in health to prevent disease. The ignorant only are the dupes of these professions. Lime is a most excellent manure, and, when
properly applied, most beneficial; but it may become inert, or even noxious, when applied injudiciously.

The property to which lime owes its value is a good and powerful power in promoting the growth of vegetation, the combining with certain elements of decayed animal and vegetable matter, and forming a compound which is soluble in water, and which attracts carbonic acid and moisture from the atmosphere. This substance is readily taken up by the sap of vegetation, combined with oxygen, hydrogen, and carbon, which are the elements of all vegetable substances, if we except a few which also contain nitrogen, one of the component elements of the atmosphere. Thus we see that air, water, and carbonic acid are sufficient to afford all the elements of which the two-thirds portion of the lime is chiefly to facilitate the absorption of these elements, besides depositing the very minute portion of the pure earth in certain parts of the vegetable. Thus lime acts as a solvent, in the same manner as water would, but a larger quantity would have the same effect. The alkalies are seldom used as manure in a pure state, but they abound in ashes, sea-weeds, and all woody fibres of vegetables; and when these are used as manures, the alkali produces its effect. Lime, being so much more abundant, and obtained at comparatively little cost, is preferred. But lime, besides its effect on the humus in the soil, acts also on the clay which it may contain; and where this is abundant, its effect is most beneficial. For this purpose it need not be in a compact state, but which can be obtained in quantity, from its abundance in many parts of England, effects a much more permanent improvement in the soil. But chalk acts also chemically wherever acids exist in too great abundance, whether they be mineral or vegetable; it neutralises the acids, and gives out some of the carbonic acid which is combined with: and this, before it is quite expanded into gas, is readily taken up by the moisture in the soil and carried into the vessels of the plants, where it deposits the carbon, leaving the oxygen escape by the pores of the bark and leaves.

Where limestone is abundant, and the burning of it is expensive, it is sometimes broken and pounded fine: in this state it is of great use in stiff soils. At first it acts merely mechanically, as fine sand would do; but gradually neutralising and meeting with acids, its chemical effects become apparent.

The use of quick-lime in rendering inert vegetable fibres, and hastening the decomposition of animal substances, is of the greatest importance in agriculture. Substances may be rendered highly enriching in a short time, which, without it, would have lain long dormant in the soil or the dung-heap. Its effects in this way will be more particularly noticed when we treat of the action of the lime on the vegetable.

Wherever there is peaty matter in the soil, which, owing to the tannin principle which it contains, is, by itself, perfectly incapable of putrefaction, lime is the true remedy. Assisted by facultative matter to produce a decomposition of the vegetable body, it assists in the process, and by dissolving and converting it into real humus, than which there is no better food for vegetation. The ashes of burnt peat act in a different way; they contain alkaline salts and earths in a state of minute division. They do not furnish any substance from which a plant derives its vital substance in bulk, but they serve to prepare other substances in the earth and convert them into manure. They have also some effect in stimulating the action of the vessels which elaborate the different juices, as culinary salt has on the stomach of man. It has the additional advantage that there is no effect to soothe the eye, and the lime is not to be deduced from analogy in the absence of positive proof. From all this the practical use of lime, chalk, or ashes is readily deduced. In a very stiff clay, chalk or lime will render it more porous, and admit the influence of the atmosphere; will facilitate the activity and the growth of organic substances, and vegetable manures. Quick-lime spread on a soil abounding in vegetable matter will make it active by dissolving the half-decomposed fibres and converting them into a soluble mucilage, being extremely minutely divided by its property of attracting moisture rapidly, a very small quantity produces an immediate effect. Hence it is generally spread over fallows or clover-leys, which are preparing for wheat-sowing. If it were put on the land long before the wheat would have lost its power of attracting carbo-

away, except as far as it has thoroughly pulverised it. But frost does this with chalk spread before winter at a much more efficacious work, and the nature of the chalk, the soil, and its effects being preserved, many years after at the lime would have disappeared. It is therefore a matter of more experiment and calculation whether it be more profitable to put ten waggon-loads of chalk on an acre of land, than to put three or four, as the fact of the roof being covered by the deposit of the soil is. If the soil be very tenacious, the chalk will probably be its most profitable in the end as well as the cheapest; but for a few crops the lime may appear to have the advantage. Everything depends on situation, and the comparative value of the soil and the chalk can be determined.

On poor sands chalk will be found to produce a greater and more permanent improvement than the same value of lime, which, unless it be mixed with clay or vegetable substances, will not be of great use on such soils. When marl is of a neutral or acid nature, it will be used to good effect except for the porous nature of sand, whether mixed by nature or artificially. But marls are chiefly ammendatory, and as such will be noticed separately. (Macr.)

The substances which have generally been used as manures are numerous and various, and have been divided into stimulating and nourishing manures. All animal substances are ranked under the first, and all organic matter under the second.

When ignorance sheltered itself under vague terms, the facility of giving a name to any substance, which was attributed to the general inrush of manure, or 'nitre,' both very undefined substances, which led to errors instead of promoting the investigation of truth by observation. Nitre was supposed to exist in dew, rain, and snow. All vegetables were supposed to consist of act or spirit, or earth, or air, or water; and as it was not possible to separate the one from the other, it was concluded that organic substances, and on this uncertain foundation theories were built and practices recommended. It was said that when the soil was well-manured it imbued nitre from the atmosphere, because it was known that animal and vegetable matter characterised by the heap of manure, from the remaining action of organic matter in it, it was supposed to be the effect of the nitre which remained. That nitre may be of use in some cases we will not deny; but there is not the slightest foundation for believing that it is the real pabulum of plants, or that the soil owes its fertility entirely to its presence.

From the most accurate analysis of the component parts of plants, it is ascertained that salts and earths form a very considerable part of their essence, and that carbon and water furnish by far the greatest part. The action of the atmosphere is found only in some of these, and metallic substances seem entirely adventitious. It has been supposed that all the carbon in plants might be supposed to be contained in the carbonic acid, as those is all separated by any proof; on the contrary, plants will not blow if there be in the soil in which they grow substances which contain carbon, that is, chiefly animal and vegetable substances, and chalk. The two first readily part with it, but the latter retains it too strongly to lead us to conclude that the plants draw any of it from this source, unless where a stronger acid is present to release the carbonic acid by its greater affinity to lime. We may conclude then, that from whatever source the oxygen and hydrogen of vegetable substances are derived, there is a reaction to which the carbonic acid or carbon earth is reduced, and the influence of organic substances, either animal or vegetable, and that these, in a certain state of decomposition, afford the supply of carbon by which the plant increases and secretes juices. As in the animal digestion the chemical affinities of the substances are at work, it is to be supposed that there is an inorganic affinity, or greatly modified by a vital energy of that organism, so in the conversion of the simple vegetable sap, it is observed but little from pure water, into the various substances which are produced by vegetation, no analogy can be drawn from the experiments of the botanists, which has been the secret of transmutation, and it is only by watching her operations and endeavours to imitate them, that we can hope to come to useful practical results.

Those preliminary observations are necessary to the consideration of the comparative importance of various substances used as manures,
The first and most important class of manures are the excrements of animals. The peculiar property of earth in absorbing putrid effluvia and removing disagreeable smells, appears an indication of nature to lead us to bury putrid animal substances. The excrements of domestic animals are the most numerous and obvious. It would require no length of experience to show that wherever this is done vegetation is more vigorous. There is therefore another motive for burying dung than merely to get rid of a disagreeable smell, which is a circumstance we need not dwell upon. The fresh dung dropped on the ground far from improving the herbage where it has fallen, appears to injure it, and render it unfit for cattle to eat; when it gradually disappears, and not till then, the spot is restored to its former term; about a month after a colt is dug into the ground and covered with earth, the fertilising effect will be immediately perceived. This is a sufficient lesson to the husbandman to make him bury the dung as soon as possible. But this not being always practicable, it is collected in heaps under the name of land-dung, which is collected by ploughing or digging. By mixing the straw, which has served as litter to cattle, with their dung, the quantity is increased, and by allowing this mixture to heat and putrefy, a greater quantity of manure is produced. This is proper in the case of poor farms, and has been applied to show the most profitable mode of collecting dung and forming a dunghill; but experience has, in many countries, taught methods which accord well with what science might have taught. The manure must be soluble before it can be effective; and if dung is dug into the ground and covered with earth, its decomposition is greatly accelerated, and the manure can be much more effectually and quickly applied. The exact moment when it is most advantageous to bury it in the ground seems not yet fully decided. Some let the decomposition go on until a great portion of the heap is converted into a black, tough, dry manure, which must be kept in a loose state, putrefaction, which the dung promotes when duly moistened.

All well-managed dunghills are therefore watered in dry weather, and turned once or twice a week, in order to give the same degree of putrefaction. The exact moment when it is most advantageous to bury it in the ground seems not yet fully decided. Some let the decomposition go on until a great portion of the heap is converted into a black, tough, dry manure, which must be kept in a loose state, putrefaction, which the dung promotes when duly moistened. The most experienced farmers agree, that whenever the brown colour of a dunghill verges towards a black, it is best to make it up with earth. The manure which is produced by their dung is uniform throughout the mass. Whenever dung is mentioned by foreign agricultural writers, it is generally understood to be in this state, which in English is called short dung.

As long as wanted for the land at different seasons, it is of consequence that the dung from the yards and stables should be collected in such heaps, and managed so as to be in the exact state which is thought most advantageous at the time when it is carted on the land. To effect this some attention is required. The oldest portion must have its putrefaction retarded, and the newest accelerated, to bring them both to the same state. This is easily done. If a certain thickness of dung is kept trodden down by the cattle, it is said to be long to its colour, for that colour is too much of the appearance of charcoal to be very effective; and it is only the exuding juice which is immediately fertilising. The most experienced farmers agree, that whenever the brown colour of a dunghill verges towards a black, it is best to make it up with earth. The manure which is produced by their dung is uniform throughout the mass. Whenever dung is mentioned by foreign agricultural writers, it is generally understood to be in this state, which in English is called short dung.
yard. The specific gravity of the liquid is readily ascer-
tained by an instrument, and those who have long
experience of its use, that urine and similar animal
substances have a more powerful effect on the soil,
when they have undergone a certain degree of putrefa-
tion, than when they are in a fresh state, and that the per-
duced with the least loss of substance when the liquid has
been confined in close vaulted cisterns which admit the ex-
ternal air only partially. On light soils this liquid has a
most fertilising effect, if it is used frequently in small por-
tions, whereas it will be very tedious and would be
apparent, and for such soils the liquid is accordingly mixed
with sand or any light earth before it is applied; or, instead
of using it at once upon the land, it is poured over the litter,
which has been collected in a heap or in a yard, after hav-
ing undergone its practical of accumulating straw bedding,
and of the urine which would otherwise have mixed with it,
would not very slowly and produce a very inferior kind of
manure, unless it were moistened, and fermentation were
excited by pouring the half-putrefied urine over it. It may
be used either with fresh urine or the straw which has served as litter, it would be as well to let it be mixed at first, without the trouble of pumping it up and the expense of a cistern to hold it. But we shall
sooner or later see that there is a very wide difference. In the com-
mon mode of collection of farm-yard and stable
-unequally impregnated with animal matter: at one time it
will contain a large portion and run rapidly into fermenta-
tion; at another, there will be so little, that it is with diffi-
culty that heat is excited in it. By separating the urine
and litter, the straw will go much further, and can be mixed
with the urine at the most advantageous time; thus it
forms a much richer manure in a smaller compass, from
not being so much diluted with water. Should there be a
decay or putrefaction, it should be prevented by
cluded into a cistern, which will be a much better and drier bed left for
the cattle, especially if the rain is kept off by light shades.
When the litter is soiled to a certain degree, it may be re-
moved to a heap in a proper place, where its conversion into
the fresh litter of the stables, not being even thoroughly soaked
with moisture. It is true that good farmers pay more atten-
tion to their dung-heaps, and endeavour to carry out the man-
ure that is produced, but how much more readily would this be accomplished by the help of a large cistern
full of the richest animal matter in a state of partial putre-
faction. In those situations where straw bears a high price,
it may be doubtful whether a cistern might not permit a
considerable saving to be made by the producers of a portion in the bed, without any diminution of the manure for the
farm, since for light soils the liquid might be used alone,
and for stiffer soils it might be mixed into a compost with
earth, chalk, and any kind of refuse vegetable matter of
value. It was a celebrated agriculturist* who the writer of this article,
that he considered the use of straw in dung to be merely as a
sponge to hold the liquid animal matter in its pores or tubes.

In fact, straw or old thatch merely rotten by long exposure
air and moisture is of little or no value as a manure,
although it will sometimes produce good potatoes, by re-
dering a still soil pervious and porous; but, in a light soil
a gallon of urine is worth ten times its weight of rotten
straw. This change may be applied to instructive agriculturists,
but it will bear the test of experiment.

The great use of liquid manure on light soils is to impre-
seed them with soluble matter, which, being de-
fined through their substance, supplies nourishment to the
roots of plants, whereas the manure applied to the
land at any time before the seed is sown, and even
after, when the blade springs up or the seed begins to form,
short, whenever the plant requires fresh nourishment, or
when that which existed in the soil is diminished. Without
the use of water there could never be cultivated, much less produce crops which the
quantity and quality with those on the best soils. The
quantity of farm-yard dung, in a very rotten state, with
this soil would require according to the common system of
management, in the experienced season, all the dung that
be raised upon it in its first state of cultivation. But
cattle produce urine, and this produces roots for cattle.
The great effect of liquid manure has set the farmers in
search of some special substitute for the simple urine, and
digested dung of cattle. Such substance to be
mixed with a portion of putrid urine, soon be-
*Mr. De Balthasar of Hofwyl, near Bern, in Switzerland.
designed to provide a commercial product, it would be
soil to supply the necessary increase of food, as well as an increase of produce from
which they are naturally fertile.

The increase of manure by the formation of composts is
well known by the farmers of the various districts,
and its value varies according to the character of the
land has in many districts been rendered much more
productive. The fundamental principle upon which
compost has been made, is that of impregnating portions of
earth with those parts of the dung of cattle, which, from want of
management, in the common season, all the dung that
has been dissipated and lost; and also accelerating or retarding the
decomposition of animal and vegetable substances by the
addition of earths, such as chalk, marl, clay, and even sand,
according to the nature of the soil on which the compost
is to be used. The character of the land where the
the ground should contain certain parts already soluble
in water, which promote vegetation: while other parts
should be in a progressive state, so as to afford a succes-
sion of soluble matter by a gradual and slow decomposition:
and although the dung itself may be used, and the
manure, and suggest the best mode of applying it, we would
guard against its being supposed that solid dung may be
altogether superseded by liquid. Liquid manure, however
active and immediately effective, soon loses its power
whereas solid dung, well prepared and placed on the
ground, will last for several crops. It is the judicious use
of both these manures, conjointly, has the best and
most permanent effect. The dung or compost, having been
begun to decompose, requires some time before it can have an
significant effect on the improvement of the
state, of the plant. The liquid, on the contrary, acts from
the moment it is poured on the surface. It is the
work of the young plant, which thrives upon it and stretches out its
fibres through the earth, till it reaches the dung which
having undergone that drainage and decomposing
humus, is now in a proper state to supply the more vigorous
roots with sufficient nourishment. It is evident that
the growth must be more rapid and regular, and not so
lax as when only the dung is used. The result of proper nourishment, nor are the
young roots in danger of being exposed to the immediate contact of dung. Every
action should therefore be made by the industrious husband-
man to increase the quantity and improve the quality
of this product; the manure must be both solid and liquid: and her
careful experiments can alone establish the
Humphry Davy, who so much enlarged the sphere of
capable by his discoveries, hastily asserted that
the dung from the stables and yards should be used.
in the soil as soon as possible, because when it is col-
ducted in a dunghill a great portion of volatile and gaseous
matter escapes into the atmosphere. But he did not pro-
cede to show whether the ammonia or hydrogen which
escapes would have been of any use in the soil; perhaps
this omission, in detracting the value, even the bulk of the manure, actually improved it. It does not
appear that fermenting dung produces carabolic acid, for
a man may sleep on hot dung without much danger, which
would not be the case if much carabolic acid were evolved;
the latter is produced of fibrous matter; the latter to add to the mass, and absorb any portion of acid, which is
always produced in a certain stage of the fermentation.
The mode of doing this is so generally known, that it is
needless to describe it: we shall only observe that the
mass which is most likely to become richer is the better
soil is not at hand; and for light lands, the stiffer the
clay the better, provided it be thoroughly incorporated with
the manure. The most useful material, under proper ma-
nagement, is post or turf. This may be laid in layers with
the manure remaining spread over the soil, rolling it in
to pulverise it some time before it is ploughed in.

Without pretending to decide between these opposite
practices, we will venture to affirm that, until more light
is thrown upon the process of vegetation and decom-
position, the sure experience of the farmer is more trust-
worthy than the most plausible theories of men of science,
unless they are supported by numerous and accurately
conducted experiments on a large scale.

In the United States, and in most principal objects are, to
regulate the decomposition of the organic substances, and
to increase the bulk of the manure by means of less expen-
sive materials than straw. For these purposes lime or chalk
is generally used: the former, in its caustic state, to ac-
celerate their decomposition; and plaster of Paris to be
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the manure remaining spread over the soil, rolling it in
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this suggests a mode of supplying the soil with moisture, and may account for the effect of salt in particular cases.

The experiments which have hitherto been made on artificials have not been sufficiently varied to lead to any very accurate conclusions as to the most profitable methods of application. There is a great variety of plants, possessing different constitutional habits, to which the gardener is required to give attention, and also because of the different results which are expected in horticulture and agriculture. In preparing the present article the writer has confined himself to simple practical facts, and has adverted only occasionally to chemical explanations.

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The gardener is called upon to cultivate species from almost every kind of soil on the surface of the globe, intermediate between the shifting sands of the desert and the most fertile alluvial land continually enriched by the decay of vegetable substances. In the first case considerable care is requisite in applying manure and in determining the quantity or quality suited to the respective constitutions of the various subjects which can be grown under his care. Thus, although many plants can, and will, receive too much manure, others, such as the resinosus trees, are actually killed by it.

The kind of manure chiefly used, and frequently the only kind procurable by the gardener, is that derived from the farm-yard—consisting chiefly of manure from the stables less mixed with litter. Formerly it was very generally the custom to take advantage of the heat resulting from the fermentation of such dung in hot-bed forcing, and there are still some objects for which this heat is found preferable. But since the hot-water system of heating has received so many improvements, the continued fermentation and consequent degree of decomposition which dung undergoes in hot-beds is rendered a less important means of obtaining artificial warmth, and consequently it becomes impracticable to use the more or less manure to injurious purpose. Manure, when used, would be impossible to particularise them, they may nevertheless be made sufficiently known by stating that they consist of—

1. All animal substances without exception.

2. The premonitory seasons, all animals.

3. All kinds of vegetable substances, in one state or another.

4. A few mineral substances, of which one of the principal is lime.

An excessive use of manure is very injurious. But if the dung be turned short, containing little straw, and that well watered with the liquid proceeds of the stalls, it may be dug as usual for fermentation for most kitchen-garden crops, provided it is well diluted and the surface trenched in. This is necessary in all cases, but more especially so when the manure is applied fresh; for dung is often induced by the roots entering into massed portions of different substances which either wholly or, at any rate, to a considerable extent, powerfully predominate over the proper nutritive solutions.

But on the other hand, if the soil is of a wet and stiff nature, then long unrotted dung is most proper, because its straws form so many minute drains which, to speak technically, serve to convey the moisture and artificial manure and draining, a coat of potatoes, for example, can be raised very superior in quantity and quality than obtained from the application of rotten dung. In the case of the previous reduction of the fibre of the straw is not reduced, it can, for the moisture with such soils is insufficient to effect this by degrees, and whilst the process of growth is going on. The authority of Miller may be adduced on the subject; in his 'Gardener's Dictionary,' he observes, 'In very cold moist land, I have frequently seen new horse-dung crops raised from the old, and I have observed that the crops have succeeded better than where the ground was dressed with very rotten dung.'

On the other hand, dung that has been moderately fermented, if it is frequently turned over, as to be easily cut with a spade, is the most suitable for slow-growing crops, or for slow-growing crops, where the roots have to remain for many years in contact with it. If the heat arising from fermentation do not exceed 160° Fahr., Sir Humphry Davy considers that but little loss will arise from the process.

With regard to trees and many perennial plants, the injury would be incurred by using fresh dung instead of rotten, for the first season, or rather while vegetation continues active; but after the roots become nearly dormant, so much of the heat may have grown luxuriantly during the summer, but which they are arrested by the approach of winter, decomposition will still be going on amongst the materials on which they feed, and these materials may perhaps be chemically changed; for the moisture with such plants is sufficient to nourish, before the roots are again called to action.

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position will be rapidly brought about. Bones are another form of animal matter much employed, and of considerable advantage as a vegetable manure; but if reduced into small fragments and fermented before being used. Gardeners often use them in that state for forcing strawberries, and, reduced to dust, as a top-dressing for lawns.

The liquid portions of excrementitious manure likewise require either to be diluted with water or to receive an admixture of soil before they are brought into contact with the roots of plants. In the case of trees with roots lying deep in the ground, such dilution is not always necessary; but, generally speaking, it weakens their vitality if nothing else is done. Sir Humphry Davy recommends covering dead animals with five or six times their bulk of soil mixed with one part of lime. This, when mixed, may be observed, will still form a very strong manure, and for some plants much too retentive, and in the end it turns into a stable compost, particularly if broken bones are mixed with it.

Manures derived from the vegetable kingdom require little preparation if they consist of such plants as are chiefly parenchymatous, such as the brassica tribe; their soluble and retentive water being so much absorbed by or reduced to dust, as a top-dressing for lawns.

The period of their growth when this is most beneficially performed is before they run to seed. Seeds may even be used with great advantage, if properly prepared; but bad consequences may result from using uncured earth, and especially from occasioning much expenditure of labour to extirpate them again. Seeds, it is well known, will germinate without air; but with this, and sufficient heat and moisture, nothing can prevent them from germinating. Therefore if seeds be planted in any form of manure, and fermentation is encouraged till the heat is fully equal to that which would naturally cause the germination of the seeds, taking care that the outside be turned into the centre, no danger will arise from using such manure after the seeds are confounded. The germination of the slowest vegetating seeds which the heap may contain, because under these circumstances the young plants will be continually parboiling as the heap is turned off from week to week. There are many aquatic plants that will not germinate in any form of manure, and the result to the above is not essential for the purpose of killing their seeds before their application to dry ground, which is not, as it were, their proper element.

Yeast is a most powerful vegetable manure, especially if employed in a state of putrefaction; but it requires to be diluted with water till it appears of the colour of very small beer. Applied in that state, it has extraordinary power in stimulating the growth of annual crops of all kinds. But cultivated into malt, it requires permanent, for lawns however it is a restorative manure of great value. The same may be said of malt-dust.

It is observed by Sir Humphry Davy that mere woody fibre seems to be the only vegetable substance that absolutely requires fermentation; and he instances tanners' spent bark as a substance very absorbent and retentive of moisture, yet not penetrable by the roots of plants; or it might rather have been said, not capable of affording nourishment, from the predominance of some noxious principle, which requires to be decomposed; for when this principle is broken down by fermentation, plants, as may be observed in bark-beds, grow very readily in tan. This deleterious principle is the tannin which bark contains, and the reason of its noxious effects upon plants is that it is not a vegetable matter to which roots abound, and the presence of which, in an organisable state, is indispensable to the existence of roots. (Payen, in Ann. Sc., new series, ill. 18.) Inert peaty matter is a substance of the same kind, and will remain for years exposed to air and weather, and yet not be decomposed, on heating or fermentation, inert, it is in vain to attempt to grow any sort of plant in it; but nothing is more certain than that if drained of stagnant moisture and mixed with lime and dung, it will become very fertile for most crops. It often happens that peat or bog, procured at a great expense for American plants, becomes inert; in such cases, a good result would be obtained by turning out the peat and mixing it up in a heap with a quantity of leaves or fresh litter sufficient to promote a moderate degree of fermentation; then, as in the case of tan, it will afford nourishment, and will, from a state of uselessness, become valuable.

Of mineral manures, lime is the most useful. It is not recommended for soils that contain a large proportion of vegetable matter, but it produces excellent effects in such as abound in inert vegetable fibre. In this state, it is found in the ashes of grasses, proves a manure for lawns.

Common salt is sometimes employed in minute portions; especially in combination with vegetable matter, in the increasing case of sea-water, and is found of good quality for fruit-trees and kitchen-garden crops. But in those cases, it is certainly destroyed by it, if applied in any considerable quantity. Exceptions may be noticed in the case of marine plants; the Samphire (Citharida maritima), for example, grows in great abundance; and this is also true of the vegetable inhabitants of the great salt plains of Asia. Wood-ashes, which consist principally of vegetable alkali united to carbonic acid, are a good manure, but of short duration, and they leave peaty soil in a worse case than before. Lime and salt are both equally necessary, and much more especially so when draining is judiciously attended to.

There is no considerable number of plants to which manure is prejudicial. Coniferous species of all kinds are affected most injuriously by it, and it requires to be given with very sparingly to any other plants, especially stone-fruits, such as cherries, plums, peaches, and nectarines. To many however it appears to be useless; orchidaceous plants for instance, which it is now the fashion to cultivate so extensively, seem insensible to its application; and it is not to be expected that the在美国人 residual plants in general scarcely require it, unless the peat in which they are grown be regarded as a kind of manure.

MANUSCRIPTS [PALOGRAPHY.]

MANZUZIO, ALDO, born in 1447, at Bassiano in the Kingdom of Italy, or Friuli, in the State of Udine. He became intimate with Pico, count of Mirandola, and with Alberto Pio, lord of Carpi, with whose assistance he established a printing-press at Venice. The art of printing was first introduced into Italy from Germany by two Benedictines, from Hainburg, who printed the works of Lactantius in the monastery of Subiaco in 1462. This was the first book printed in Italy. In 1469 two other Germans from Speyer established printing-presses at Venice, and soon after the art spread rapidly throughout Italy. The first Greek book was printed at Milan, and the first Hebrew types were used at Soriano near Cremona. Nicholas Johnson, a Frenchman, established a printing-press at Venice in 1471, which was distinguished for the elegance of its typography. He was the author of the greater part of his time in the correctness of his books. Being a man of learning as well as a printer, and having an extraordinary zeal for his profession, he procured the most correct MSS. from distant countries, and he established an academy in his house with the view of obtaining assistance in the superintendence of his publications. Bembo and Navagiero were among the members of that society. The first publications of Aldo appeared about 1490: the first with a date in 1494. In this year he published the poem of 'Hero and Leander' in Greek and Latin, and shortly after the Gramma of Lascaris, and that of Gaze, with Theocritus, and the works of Aristotle. He invented a new sort of type, which was light and resembled writing, called by the Italians 'cornis,' and known to other nations by the name of 'italic.' In 1499 Aldo published, at Milan, the first printed list of the Aldine editions was published at Padua in 1790: 'Serie delle edizioni Aldine per ordine alfabetico e cronologico;' and a still more complete catalogue has been since published at Paris by Renouard: 'Annales de l'Imprimerie Italienne et Moderna' in 15 vols. 12mo, 1803; a second edition of which, in 3 vols., was published in 1825, and a third, much improved, in one vol. 8vo, Paris, 1834. It is said that the Greek books of Aldus are less correct than his Latin and Italian prints; but it must be recollected that they were all printed from a single MS., and that an imperfect one; a circumstance however that renders some of his Greek books very valuable at present, as being tolerably faithful transcripts of MSS. either now lost or not accessible. These editions, especially when upon large paper, have often sold in modern times for considerable sums.
Aldo complains in several of his prefaces of the difficulties which he experienced, and the intense labour which he had to undergo in his profession, to which he devoted his whole life. He died at Venice in 1513, with the well-merited reputation of being not only an accurate printer, but a good scholar. He was the author of a Latin and Greek Grammar, a Greek and Latin Dictionary (the first of its kind), and several other works. His son Paolo Manuzio succeeded him in the direction of his printing establishment. Paolo was not only an excellent printer, but a good scholar. His principal works are: 1, 'Antiquitatum Romanarum liber de Legibus,' fol. 1569; 2, 'De Comitis Romanorum;' 3, De Senatu Romano; 4, 'De Civitate Latina;' besides notes and commentaries on Cicero's Epistles and Orations.

From the French, a napkin; French, mappemonde, a map of the world.

A map is a representation of the surface of a sphere, or a portion of a sphere on a plane. The name however is commonly applied to those plane drawings which represent the earth, its atmosphere, and other particulars of the various countries of the earth.

Maps or delineations resembling them may we reasonably conclude were coeval with the earliest geographical knowledge, for we can scarcely conceive such knowledge to exist in a man without some means of indicating his own position, or the same as at illustrations, however rude and defective, by means of linear representations on a plane surface. It is not possible indeed to fix the time of these first attempts to construct maps, but there is a good reason for supposing to this a certain parallelism. In all maps we are not only ignorant of the art, for we find Joshua commanding his selected men in the following terms: 'Ye shall therefore describe the land into seven parts, and bring the description hither to me, that I may cast lots for you here before the Lord our God.' (Josh. xvir. 6.) This knowledge of the Israelites was most probably derived from the Egyptians. The geographical knowledge of the Greeks, as exhibited in the Homeric poems, comprehended only a small part of Europe, Asia, and Africa, and there is reason to suppose that they were in that time of delineation or representing the surface of a country. In the seventh and sixth centuries before the Christian era, and even earlier, we know that the Greek nation was widely diffused by colonization, which, combined with their spirit for commercial enterprise, must have given them a greatly extended geographical knowledge. In their maritime adventures they are said to have been assisted by the nautical maps of the Phoenicians; but however this may be, we have no account of anything deserving the name of maps before those of Anaximander the Eleusinian, who is mentioned by Dionysius of Halicarnassus (ἀναγεγραφον), till they arrived as far as Tarentum in Italy. The map of Aristogoras of Miletus is also deserving our especial attention, from its being so particularly described by Herodotus (v.), and from its likewise being among the first maps that were inscribed in any kind of delineation or representing the surface of a country. There is a passage in Herodotus (iii. 136) which may perhaps indicate something like an attempt at mapping a coast. Certain Persians, being commissioned by Darius I., sailed from Sidon in Phoenicia to the coast of India, 'where they were not able to come again,' after which 'they returned' (ἀνεπάνω), till they arrived as far as Tarentum in Italy. The map of Aristogoras of Miletus is also deserving our especial attention, from its being so particularly described by Herodotus (v.), and from its likewise being among the first maps that were inscribed in any kind of delineation or representing the surface of a country. There is a passage in Herodotus (iii. 136) which may perhaps indicate something like an attempt at mapping a coast. Certain Persians, being commissioned by Darius I., sailed from Sidon in Phoenicia to the coast of India, 'where they were not able to come again,' after which 'they returned' (ἀνεπάνω), till they arrived as far as Tarentum in Italy. The map of Aristogoras of Miletus is also deserving our especial attention, from its being so particularly described by Herodotus (v.), and from its likewise being among the first maps that were inscribed in any kind of delineation or representing the surface of a country. There is a passage in Herodotus (iii. 136) which may perhaps indicate something like an attempt at mapping a coast. Certain Persians, being commissioned by Darius I., sailed from Sidon in Phoenicia to the coast of India, 'where they were not able to come again,' after which 'they returned' (ἀνεπάνω), till they arrived as far as Tarentum in Italy.

Some curious particulars have come down to us illustrative of the geographical ignorance of the middle ages, yet maps do not appear to have been uncommon among them. The maps of the middle ages may be generally classed as follows:—1st, those in which the notions of the ancients were adhered to; 2nd, those which exhibited new discoveries or countries popularly believed to exist. Many maps of the former class are extant in which the old world is represented as one great island, Africa terminating to the north of the equator. Among maps of the second class are those which seem to show some important discoveries in the west of Europe and of Africa in the twelfth and thirteenth centuries. The geography of the Arabs is but imperfectly known. Their most eminent geographer Edrisi or Eldrisi, who lived about the middle of the twelfth century, divided the world into climates from the equator northward, and each
climate was again divided into eleven equal parts, from the western coast of Africa to the eastern coast of Asia, the inconvenience of which arrangement is very obvious.

Towards the middle of the seventeenth century several astronomers undertook to observe eclipses of the moon with a view of correcting the errors in the longitude of places. These observations however were so discordant as to lead to no satisfactory result. Galileo, by the discovery of the satellites of Jupiter, introduced a more convenient method, which was rendered available by means of the simultaneous observations of Picard and Cassini at the observatories of Uraniborg and Paris.

Picard and De Lahire were then immediately employed in correcting the map of France, and from this period on maps have rapidly improved. The great perfection to which timekeepers have been brought, and the obvious application of these machines to the determination of the longitude, have greatly contributed to their accuracy. But notwithstanding this advanced state of nautical and astronomical knowledge, and the science and skill displayed in our national and other surveys, we may, with Dr. Blair, regard maps as works in progress—always unfinished, and still waiting the corrections to be supplied by the science and experience of succeeding ages.

Having thus briefly sketched the progress of map-making, we proceed to give a general outline of their application and construction.

On the Nature and Construction of Maps.—Maps, being plane representations of the surface of a sphere, may be obviously applied to various purposes; hence we not only have terrestrial maps to represent the surface of the earth, but celestial or astronomical maps to represent the sphere of the heavens; and these general distinctions have again divided in a variety of ways the objects represented.

There are two kinds of terrestrial maps—geographic or land maps, and hydrographic or sea maps: we shall confine our attention principally to the former; the latter, which are usually called charts, having been already described. [Chart.]

Geographic maps, as already noticed, are those which represent the forms and dimensions of the several parts of the earth, with their relative situations and the positions of the cities or towns, rivers, lakes, etc., which compose the land masses. They may comprehend the whole earth, or one of its larger divisions, or a single district, and are called maps of the world, general maps, or particular maps accordingly. If they give the nature of the ground, the roads, buildings, etc., in detail, they become topographical maps, which, necessarily embracing a very small extent of country, are not usually referred to any spherical projection, but are represented as geometric planes, the objects in them occupying the positions severally assigned to them by the trigonometrical operations of the case. The same distinction is made in charts of small bays and harbours. In either of these cases they are called plans.

When maps of the earth are made to illustrate any of the sciences, they are distinguished from geographic maps, precisely as those being the forms, portions of which resemble portions of a sphere, and which, at the same time, are susceptible of the required development.

We shall notice these two principles very briefly, as their mathematical investigation more properly belongs to the article Projection.

There are four methods of spherical projection: the Gnomonic or Central, the Orthographic, the Stereographic, and the Globular, distinguished from each other by the different positions of the projecting point in which the eye is supposed to be placed.

The Gnomonic or Central Projection supposes the eye to be placed in the centre of the sphere, and that the various objects to be delineated are transferred from the sphere to a plane, which is a tangent to its surface. The entire hemisphere can never be represented by this projection, since the circumference which terminates it is on a level with the eye, and is therefore parallel to the plane of projection. This method is chiefly used in squaring; but may be advantageously applied to maps of a limited extent, more especially if they are maps of the polar regions of the globe. In this case the meridians will be straight lines radiating from the centre, and the parallels of latitude concentric circles, whose distances from the centre will respectively be equal to the cotangents of their latitudes.

In the other cases of this projection, where the perspective plane is parallel to the horizon, or to any meridian, the construction is rendered troublesome on account of the parallels of latitude becoming curves of difficult delineation: these cases therefore are seldom brought into use.

Orthographic Projection.—In this projection the eye is supposed to be at an infinite distance, so that the visual rays leave the sphere in parallel lines. The perspective plane on which a hemisphere is supposed to be delineated is the plane of that diameter which is perpendicular to the visual rays—hence every point of the hemisphere is transferred to this plane by perpendiculars let fall upon it. It is obvious from the figure, that the representation will decrease in accuracy with the increase of distance from the centre; the parts near the circumference being much foreshortened and distorted.

In a Polar map of this projection, the meridians, as in the Gnomonic maps, will be radii, and the parallels concentric circles; these circles however will have their distance from the centre equal to the cosines, and not to the cotangents of their respective latitudes.

In an Equatorial map, or one in which the equatorial regions of the globe are made to occupy the centre of the map, the plane of projection coincides with the plane of one
of the meridians. In this case the latitude circles will be projected in straight lines parallel to the equator, which is also a straight line, and will vary in distance from it according to the sines of their respective latitudes. The meridians will be portions of ellipses intersecting the equator in points similar in position to the points of the parallels on the polar diameter, and having their transverse axes coincident with this diameter and equal to it.

Stereographic Projection.—In this projection the eye is supposed to be placed at the surface of the sphere, and to view the concave of the opposite hemisphere through the plane of that circle, in the pole of which the eye is placed.

If E be the eye, and A, B, C the hemisphere to be represented, A, B, C, D will be the plane of projection; and the position on this plane of any point of the spherical surface will be indicated by a line drawn from that point through the plane of the eye. Thus the points K, L, M, N on the sphere will be transferred to the plane at k, l, m, n.

The advantages offered by this method of projection have been previously noticed, as the method of Mercator before mentioned. It is especially calculated for maps of the world, as usually made in two hemispheres, from the circumstance of the representation being less distorted, and also on account of the meridians and parallels intersecting each other at right angles, as they do on the globe. Its construction also is less difficult than others, since all the great circles of the sphere are either circles or straight lines in the projection. The meridian of 20° W. is the one usually selected by English geographers for the plane of projection in these maps of the world, because this meridian passes very nearly between the eastern and western continents, which therefore occupy their respective hemispheres.

Globular Projection.—This projection which is a modification of the Stereographic, was invented by the astronomer De Lahire, who supposed the eye to be placed at a distance from the sphere equal to the sine of 45°; that is, if the diameter of the sphere be equal to 200, the distance of the eye from the nearest point of the circumference would be 70½. Some further modification was subsequently deemed desirable, in order that the meridians might intersect the equator at equal distances. This condition is very nearly fulfilled when the distance of the eye is 50½, the diameter being 200 as before.

This projection is also much used in maps of the world, but to simplify their construction, the meridians and parallels are projected into circular instead of elliptical arcs, the deviation from the strict law of the projection being so slight as to affect the practical utility of the map.

Of Projection by Development.

The developments to be mentioned are two—the Conical and Cylindrical.

Conical Projection.—In this projection the sphere is supposed to be represented by a cone which touches the sphere at the circle intended to represent the middle parallel of the map. If the points on the sphere be now projected on the cone by lines drawn from the centre, it is clear that in a zone extending but a short distance on each side of the middle parallel, the points on the cone would very nearly coincide in position with the corresponding ones on the sphere. All the delineations having been thus made, the cone is then conceived to be unrolled, or developed on a plane surface.

Should the map be made to extend much above or below the middle parallel, the distant parts will be very much distorted. To remedy the defects of this projection, various modifications have been suggested, among which those of Flamsteed are generally held in the highest estimation.

[Conic Projection.]

Cylindrical Projection.—From what has been said of the cone, it will be easily understood that a cylinder may be applied to the sphere in a similar manner, and that a zone of very limited extent in latitude may, without very material error, be developed on a cylinder. The peculiarity of this method is, that the meridians, as well as the latitude circles, are projected in parallel straight lines; a condition of the map which makes it very applicable to nautical purposes. Of all the methods of projection, that known as the Mercator Projection, which is now so universally adopted in our charts, and to which, in conclusion, we will briefly allude.

Mercator's Projection.—The line on which a ship sails, when directing her course obliquely to the meridian, is on the globe a spiral, since it cuts all the meridians through which it passes at equal angles. This circumstance, combined with others, rendered a map constructed on the principles of the spherical projections very inadequate to the wants of the navigator. Mercator considered, very truly, that mariners do not employ maps to know the true figures of countries, so much as to determine the course they shall steer, and the bearing and distance of those ports or places which lie near their track; and this projection is the result of these views. The meridian which he selected was 1° W., at his efforts to do to the seaman those desirable ends. The merit of this most useful method is thought by many to be more justly due to Wright; for although Mercator published his first chart in 1569, he omitted to declare the principles on which he proceeded, and his degrees of latitude did not preserve a just proportion in their reduction towards the poles. Wright, in 1599, corrected these errors, and explained the principles of his improved construction, in which the degrees of latitude on the chart were made to decrease towards the poles, in the same ratio as they decrease on the globe; by which means the course which a ship steer by the mariner's compass becomes on the chart a straight line; the various regions of the map, however distorted, preserve their true relative bearing, and the distances between them can be accurately measured.

Map (Arch.)

Maracaibo. [Venezuela.]
Maragha. [Persia.]
Maranhão (Province). [Brazil.]
Maranhão, or São Luís do Maranhão, is a town on the northern coast of Brazil, in 3° 30' 40' N. lat. and 43° 56' W. long. It lies on the north-western peninsula of an island, called Ilha do Maranhão. This island, which is nearly twenty miles long, extends along the shore of the continent, from which it is separated by a shallow channel, called Rio do Mogolito. This channel is, on an average, only 100 yards wide, and terminates in two large bays, the Bahía do S. José on the east, and the Bahía de S. Marcos on the west. The island is generally low and swampy, and almost entirely covered with wood.
The town is built on the northern shores of a small peninsula, formed by two rivers, or rather small inlets of the sea, the Rio de S. Francisco on the north, and the Rio do Icrawa on the south. It is divided into two sections. The more ancient and populous part of the town, called Bairro da Praia Grande, extends along the shore, with a broken surface. The streets are crooked, uneven, and badly paved; some of them are not paved at all. The houses have two or three floors, and are mostly built of sandstone. In this part of the town is a large square, surrounded by the palace of the governor, the college of the Jesuits, the town-hall, and the prisons, which are substantial buildings. At the back of this section lies the other, called Bairro de N. Senhora da Conceição, which consists of small houses, many of which are surrounded by gardens and plantations. Each division has its own parish church, besides which there are three other churches, two chapels, and four churches belonging to four convents. The town is defended by three small fortresses, now in a dilapidated state.

The harbor is good and safe, but the entrance is difficult, on account of a bank called Coroa do Meio, about thirty miles north of the town, on the east and west of which are deep channels leading into the harbour. The eastern, which is the most navigated, has on the east the great bank, or Coroa Grande, which extends between the northern shores of the island and the Ilha de S. Anna. The tide rises eighteen feet in the harbour, and twelve feet without it.

The mean annual temperature is 80° of Fahrenheit. The regular succession of the sea and land breezes, and the prevalence of northern winds, moderate the heat, and the climate of the town is considered healthy. The population, which amounts to about 30,000, contains a great number of unskilled natives, a few negroes, the half-breeds being comparatively few in number.

The inhabitants are chiefly engaged in commerce: only the most common articles of domestic use are made in the town; the rest are imported from Europe. The trade is rapidly increasing. The number of vessels that annually entered the harbour amounted to more than 140 twenty years ago; they came from Lisbon, Oporto, Viana, Liverpool, and New York. The imports consist of wine, brandy, oil, flour, fruits, silk, cotton and linen goods, hardware and metals, and articles brought from the East Indies, as spices, &c., and drugs. The exports are cotton, which is by far the most considerable article, rice, tanned and raw hides, &c. Sugar and coffee are imported from Pernambuco, Bahia, and other ports of Brazil. (Spix and Martius, Reise in Brasilien).

MARANÓN. [AMAZON.]

MARANS. [CHARACTERE INFERIURUM.]

MARANTA ARUNDINACEA (Linn.). To this plant is referred the arrow-root of commerce, but it is also procured in large quantities from a variety of closely-allied, and even many distinct, plants. Thus the Surinam and Borgha arrow-root is the produce of the M. arundinacea, while the Jamaica arrow-root is obtained from the M. indica (Tussac); which plant, along with several Curcumas, yields also the East Indian arrow-root. The West Indian arrow-root has mostly a pure white colour, the East Indian a yellow tinge.

The tubers, root-stocks, or offsets are grunted or bruised, and repeatedly washed with water, which is passed through a fine hair-sieve, so long as it runs off with a milky appearance. It is allowed to subside, the supernatant water drained off, and the powder dried: 100 parts of the fresh plant yield 10 parts of arrow-root; but Benzoni states 100 parts of the plant, by treating with water, yield 22 or 26 parts. According to the analysis of this chemist, it consists of volatile oil 0·07, starch 26, vegetable albumen 1·58, gummy extract 0·6, chlorides of calcium, insoluble fibre 6, water 63·6. The volatile oil imparts a slight odour to the solution in warm water, which helps to distinguish genuine arrow-root from the article substituted for it. Arrow-root has scarcely any taste, being bland and insipid; the powder, when pressed in the hand, emits a crackling noise, and retains the impression of the fingers, which common starch from wheat does not. Cassia indica (Cassia or Janipha Manihot) also retains the impression of the fingers, but it has more odour and a somewhat acrid taste.

The meals of any cereal grain may easily be distinguished from arrow-root by the nitrogen which they contain, and the ammoniacal products which they yield by distillation. Potatoe-starch is however most frequently used to adulterate arrow-root, or as a substitute for it. Microscopic observation of the form and size of the grains will point out the difference, as first indicated by Raspail (Annales des Sciences Nat., t. vi.), those of arrow-root being smaller: the different habits of the starch with re-agents will also do this. (See M.M. Payen et Chevalier, Traité de la Pomme de Terre, p. 126; see also Journal de Pharmacie, Août, 1833.) Potatoe-starch is not soluble in cold water, which is the case with arrow-root. Dissolved in absolute alcohol, arrow-root separates into two distinct portions, which neither wheat nor potatoe-starch does. In equal proportions dissolved in warm water, arrow-root yields a thinner solution, with a more slimy aspact than wheat-starch.

Arrow-root dissolved in water, milk, or any other appropriate vehicle, constitutes, from its easy digestibility, a most excellent article of diet for delicate persons and young children. It may be given plain, or with wine or spices, according to circumstances. The valuable property just mentioned does not belong to either wheat or potatoe-starch. The latter, if prepared from potatoes in spring, is very liable to disturb the stomach; but less so if prepared in October or November. Potatoe-starch may be prepared at a very cheap rate, and kept for a long period unchanged, thus affording a protection against times of scarcity. (Sir John Sinclair, On the Culture and Uses of Potatoes, Edinb. 1819.)

MARANTA/'CZE, a natural order of endogenous plants, which have either no stems or annual ones only, whose leaves have diverging veins, and whose flowers are constructed with an inferior ovary surmounted by a three-leaved calyx, very irregular and flat, white, red, or yellow; and a single stamen, whose anther has but one lobe.
With the exception of the genus Calathus, and of Canna, which is commonly cultivated, under the name of Indian shot, because of its beautiful flowers, the species included in this order are of small size, and by no means attractive, born nowhere, none of them having anything remarkable or curious in any other matter, which renders them nutritious. Arrow-root of the finest quality is obtained from Maranta arundinacea, and a similar product is yielded by Canna edulis and others. The order is known from Zingiberaceae by the anther having but one cell, or, as we shall see, none at all.

All the species are found wild in tropical countries only. MARASMIUS (emaciation) is a term often used by the older medical writers to designate those cases in which no particular cause for the atrophy of the body was discovered. It was then spoken of, employed, as of some disease which was thus named is known to be the result of some local disease, by which the complete nutrition of the body is prevented, or by which a quantity of its material is constantly abstracted; as disease of the mesenteric glands, pulmonary consumption.

MARAT, JEAN PAUL, born near Neuchâtel in 1744, studied medicine at Paris. Although not deficient in intelligence and quickness, he was eager the application and perseverance requisite, and was as much a naturalist as he was a physician.

At the first symptoms of the Revolution in 1789, he showed himself a furious demagogue, addressing himself to the passions of the Paris populace, and preaching open insurrection and massacre. He was one of the prominent men of the club of Cordeliers, formed by Danton in 1790. He then became editor of a journal entitled 'L'Ami du Peuple,' which was hawked about the streets, and became a favourite with the lower orders. In this periodical he urged the poor to rise against the rich, that their ‘blood’ might float red as the noble guillotine; and he actually published long lists of individuals whom he denounced as proper objects of public vengeance. And yet this man was returned by the department of Paris to the national convention.

In the convention Marat was the declared enemy of the Girondins: he attacked them in April, 1793; but Robespierre, who was more cautious, checked him then: things were not yet ripe for their proscription. Marat was even impeached, and under the report of La Jauglin, the club of Cordeliers, formed by Danton in 1790. He then became editor of a journal entitled 'L'Ami du Peuple,' which was hawked about the streets, and became a favourite with the lower orders. In this periodical he urged the poor to rise against the rich, that their ‘blood’ might float red as the noble guillotine; and he actually published long lists of individuals whom he denounced as proper objects of public vengeance. And yet this man was returned by the department of Paris to the national convention.

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MARBLE. A strict definition of this term is perhaps impracticable, unless with Da Costa, we limit it to the calcareous rocks, 'of very lively colours, and of a constitution so fine that they will readily take a good polish.' In a vague sense other ornamental stones, as granite and porphyry, may be ranked among the marbles. The catalogue of the typical or calcareous marbles is long enough without these some-what inconvenient additions. A limestone which will admit of being worked easily and equally in all directions is properly called marble,' as the Bath or Koton freestone; a rock of similar chemical nature, generally capable of being worked equally in all directions, and also of taking a good polish, deserves the title of marble; when it is granular and of a white colour, it may be useful in statuary.

Da Costa, in his 'History of Fossils,' gives a large catalogue of marbles, disposed in a methodical order, which we shall follow in the following brief notices of this extensive subject.

Division I. Marbles of one plain colour.

Section 1. Black marbles. Most of these contain bitu- men, and are feit when bruised.

Examples. The Namur marble, the marble of Ash- ford in Derbyshire, Dent in Yorkshire, near Crick- howell, Gliborough, &c. The marble, antiently called Marmo Lucileum, and now Nero Antico.

Section 2. White marbles.

Examples. The marble of Paros, in which the Laocoon and Antinous are executed; the Carrara marble, of fine homogeneous texture; the marble dug near the city of Rome, known as the Sky marble, noticed by Dr. MacCulloch; that of Inverary, Assent, Blair Athol, &c.

Section 3. Ash and grey marbles.

Examples. A beautiful marble, of compact oolitic tex- ture, found near the Cleo Hills in Shropshire, deserves mention.

Section 4. Brown and red marbles.

Examples. The Rosso Antico; a rival to which, at least in colour, has been found on the estate of the Duke of Devonshire, near Buxton. The mottled brown marble of Beetham Fell, near Milnthorp, is of good quality.

Section 5. Yellow marbles.

Example. The Giallo Antico. Siena marble, also dug at Maфа, near Lisbon. That used in ancient Rome is said to be from Numidia.

Section 6. Blue marbles.

Example. Near St. Pons in Languedoc.

Section 7. Green marbles.

Example. The Marmo Lacedemonium of Pliny. It is dug near Verona.

Division II. Marbles of two colours.

Section 1. Black marbles variegated with other colours. Near Ashburton in Devonshire, Torbay in the same county, Biance e Nero Antico, the African Brescia of the antients, Giallo e Nero Antico.

Section 2. White marbles variegated with other colours. marble imported from Italy. Marbles of this general character occur in Siberia, at Plymouth, at Killarney, in Sweden, &c.

Section 3. Ash and grey marbles variegated with other colours. These are very numerous, and occur in various parts of Europe.

Section 4. Brown and red marbles variegated with other colours.

Section 5. Yellow marbles variegated with other colours.

Section 6. Green marbles variegated with other colours. Examples. Egyptian marbles—the Marmo Tiberial and Augustum of Pliny; some Verde Antico, as that dug near Susa in Piedmont, the beautiful marble of Anagni, near the road to Rome (Monza marble), the marble of Kol- dersken in Sweden.

Division III. Marbles variegated with many colours.

Example. Some of the Plymouth marble, the beautiful Brocchio or Brocade marble of Italy and Spain.

Marbles containing shells, corals, and other extraneous bodies.

In this division of marbles the British Islands are rich. P. C., No. 902.
community, are included by Pliny and other antiquarian geographers within the boundaries of the Picenum. The Æsia separated the Picentes from the country of the Senones; but some antiquarian writers have considered the Picenum to extend as far as Aenium, Asculum, Firmum, Pollentia, which was inhabited by the Picentes. The name of Macerata and Tolentum were towns of the Picentes. The Picentes made alliance with Rome, B.C. 299. During the war of Pyrrhus they joined the Samnites, Lucanians, and others against Rome, were defeated, sued for peace and obtained it, and a Roman cohort was assigned to them on that occasion. (Livy, Epitome XV.) Picenum then became a Roman province, and was administered by a proconsul. The Picentes were foremost in the league of the Italian nations in the Social war, when they killed the patrician Thoerh Medici. The king of Naples, who was overthrown, fled to Rome and offered to give up the king of Cyrene. (Caesar, B. G. 6.)

Marcellus, Marcus Claudius, born of a Roman consular family, after passing through the offices of tribune and quaestor, was made consul B.C. 274. The Transpadane Gauls having declared war against Rome, Marcellus marched against them, defeated them near Ancra in the Addus, killed their king Viridomarus, and carried off their arms, the 'spolia opima,' which were exhibited in his triumph. At the beginning of the second Punic war, Marcellus was sent to Sicily as praetor to administer the Roman part of the island, and had also the task of keeping the Syracusans firm to their alliance with Rome. After the battle of Cannae he was recalled to Italy, to oppose Hannibal. He took the command of the reliefs of the Roman forces in Apulia, kept Hamilcar in check, and defeated him near Canusium, B.C. 214. He was afterwards sent to the Carthaginian town of Caesarea in Bohus. He was next sent to Spain, where the Carthaginians had declared against Rome. (Hann. 1.) After a siege of nearly three years, the town was taken in the year 212 B.C., and Marcellus returned to Rome with a high reputation. This was the last of his several partial engagements with the Carthaginians without any decisive result. In the following year he continued his command of the army, and fought a battle against Hannibal near Canusium, in which the Romans were defeated and ran away. On the following day Marcellus renewed the fight and defeated the Carthaginians, upon which Hannibal withdrew to the mountains of the Brutt. In the next year, B.C. 208, Marcellus was elected consul, for the fifth time, with T. Quintus Crispinus. He continued his military career on both sides of the Alps. Against Carthage near Venusia, he rashly ventured out, fell into an ambush of advanced posts, and was killed. Hannibal caused his body to be buried with honours. (Liv. xxxiv. 2, 14. 3.) He was one of the most distinguished Roman commanders of the Punic wars, and had the honourable reputation of a disinterested man.

Marcellus, Empiricus, was born at Bordeaux, and was magister officiorum in the reign of Theodosius the Great. The work of his master,的手稿 has been entitled 'De Medicamentis simplicibus,' by C. Sullarius, published at Basle, 1537, Venice, 1447; and with the 'Medici Principes,' Paris, 1567. Though Marcellus does not appear to have belonged to the medical profession, he gives us much curious information respecting the manner in which medicine was studied at that time in Gaul.

Marcellus I. succeeded Marcellus as bishop of Rome, but we know little of him, except that he is said to have been very zealous in enforcing the discipline of the church. He died A.D. 310.

Marcellus II. was elected after the death of Pope Julius III. in 1555, but died in less than a month after his election. He was succeeded by Paul IV. (A.D. 1555.)
MARCH, the third month of the year according to modern computation, containing thirty-one days. The Roman year originally began with March [January], and was in fact so considered in England before the alteration of the style, the legal year commencing on the 25th of March. Our Anglo-Saxon ancestors called it most commonly Hlud monath, loud or stormy month; and sometimes Hraet or Hrid monath, which some interpret Rheda's, others Rhede or Rethe, the rugged or rough month. The name of the month is said to be derived from that of Mars, the god of war.

Before 1564 the computation of the French year began from Easter, so that occasionally the same year might comprehend two months of March, Mars avant, and Mars après. If Easter occurred in March itself, the month began in one year and ended in another. The change of computation from the first of January to Easter, in that country, was directed by an edict of Charles IX.

There is an old proverb, mentioned by various writers, which represents March as borrowing certain days from April. These are called, by the rustics in many parts both of England and Scotland, the Borrowed Days. They are particularly noticed in the poem called 'The Complaynt of Scotland.'

* * * * *

There were some who thought that March borrowed them from April, that he might extend his power so much longer. . . . Those, he adds, who are much addicted to superstition, will neither borrow nor lend on any of these days. If any one would propose to borrow of them, they would consider it as an evidence that the person wished to employ the article borrowed for the purposes of witchcraft against the lender.

Ray, in his Collection, has a different proverb relating to this month, viz. that 'A Bushel of March dust is a king's ransom,' thereby expressing the importance of dry or dusty weather at this particular season of the year, in an agricultural point of view.

(M. Brady's Clavis Calendaria, 8vo, Lond., 1812, vol. i., p. 63; Furetière, Dictionnaire Universel; Brand's Popular Antiquities, 4to. edit., vol. i. pp. 66, 460.)

MARCH, in music, is, properly speaking, an air in duple time, played by martial instruments — i.e. by infallible and pulsatile instruments — to mark the steps of the infantry, as well as to amuse and cheer troops of all kinds. It however has long since gained admission wherever music is heard, and consequently is written for every kind of musical instrument. Hence some of the most striking compositions by the greatest masters; as, for instance, the marches in Handel's oratorio; and the religious marches (Marches religieuses) in Gluck's Alcestes and Mozart's Zauberflöte; the two funeral marches (Marche funèbre) of Beethoven, &c.

The true March is always written in common time, or in what is called a compound of that measure, and begins on a broken part of the bar, with an odd crotchet or a quaver. It is slow for grand or parade occasions, quick for ordinary marching. We are told by Rousseau, that Marshal Saxe used the march also for the purpose of accelerating or retarding the pace of his troops in battle. In his days there was more form, more ceremony used; something like etiquette was kept up in fighting: we doubt whether the movements of the battalions in the fields of Austerlitz and Waterloo were performed to musical movements, or even to the simple beat of drums.

MARCHANTIA/C.E.E, a small natural order of Acrogens or Cryptogamic plants, forming part of the old group called Hepaticas. They are plants of a low organization, in most instances having no distinction of leaves and stem, but a thin, leafy, lobed thallus in their room, in which respect they resemble lichen, but are furnished with breathing pores and an approach to spiral vessels in the form of elaters, which latter circumstances elevate them to the level of Lycopodiaceae and Marschalliae.

Marchantia differ from Jungermanniaceae, with which they were formerly combined under the old name of Hepatic, in not having a distinct stem, and in their fruit not being four-valved. Marchantia itself, a common plant under the north of old walls and hedges, upon damp ground, forms deep green patches with a lobed lichenoid thallus, and has reproductive organs of two kinds arranged separately below mushroom-shaped heads; one of them appears to be male and the other female. None of the species are of any known use.

Marchantia polymorpha.
1. A vertical section of an involucrum, with the young capsules imbedded in the pericarp. Endlicher separates the order into four, with the following distinctive characters:—

little in history of the marches of Wales. But the term continued in use long after the conquest of that country. The great family so celebrated in the early history of England, whose hereditary name was De Mortuo Marci (of a Dead Sea), contracted and Gallicized into Mortimer, and whose chief residence was at Wigmore Castle in Herefordshire, had the chief management of the affairs of the West Marches, known by the title of Earl of March. King Edward IV., their lineal descendant and heir-pres-ent, was called Earl of March while his father was the Duke of York.

But Scotland remaining a distinct sovereignty for several centuries, the marches towards that country are frequently mentioned, and especially as being the scene of those precariously waxings in which the people of both countries frequently engaged, or of conflicts arising out of national jealousies and disputes of rights. The maintenance of these regions, lawless, or constantly liable to become such, an object of great importance; and for this purpose the marches towards Scotland were divided into two portions, the western and the middle marches, each of which had courts peculiar to itself, and a kind of president or governor, who was called the warden.

MARCI'A'NUS, born in Thrace, of obscure parentage, towards the end of the fourth century, entered the army, rose gradually by his merit to high rank, and was made a dux in Scotland, where he defeated his brother Pulcherius, then fifty-two years old, offered her to Marcianus, who was near sixty, because she thought him capable of bearing the crown with dignity and advantage to the state. Marcianus married her, and was pro-claimed emperor at Adrianople. He reigned six years, was peaceful, and his administration was equitable and firm. He refused to pay Attalia the tribute to which Theodosius had submitted. In the year 455 Marci-anus acknowledged Avitus as emperor of the West. Marcianus died in 456, and his wife Arinia had died before him. He was succeeded by Leo I.

MARCHIENNES. [Nord.] MARCHIONITES, a religious sect of the second and third centuries of our era, so called from the term teacher Marcion, who lived in the province of Asia or Galatia. It was a sect of the old Oriental belief of two independent, eternal, co-existing principles, one evil and the other good. They endeavored to apply this doctrine to Christianity, asserting that our souls are emanations of the good principle, but our bodies the residuum of the evil principle. They rejected the infallibility of the church, the rights and promises of things terrestrial, and the creation of the evil genius, who strives to chain down our spiritual nature into corporeal fetters, so as to make the soul forget its pure and noble origin. He further maintained that the law of Moses, with its threats and promissaries of things terrestrial, was a contrivance of the evil genius for the sake of furthering more to the earth; but that the good principle, in order to dissipate these delusions, sent Jesus Christ, a pure emanation of itself, giving him a corporeal appearance and semblance of bodily form, in order to remind men of these intellectual and corporeal things, and to prepare them to happiness until they are reunited to the principle of good from which they are derived. Marcion and his disciples condemned all pleasures which are not spiritual; they taught that it was necessary to combat every impulse that attaches us to the visible world; they condemned marriage, and some of them even regarded the necessity of eating the fruits of the earth, which they believed to have been created by the evil principle. The Marcionites spread their faith in Egypt, and especially in Persia. The chief opponent of Marcion was Tertullianus, who wrote a book to refute his doctrines.

(Tertullianus Alc. Mart. Marcionem; Plut. Lec. Marc. Mar- cionis hil. tres.)

MARSHALL, Sir John, knight of Northern Mesopotamia, built on a steep hill which forms part of the chain that divides the basin of the Upper Tigris, or country of Diarbakr, from the plains of Sinjar, which are watered by the affluent of the Euphrates. Marzin is a considerable though poor town, and is said to contain 20,000 inhabitants, of whom 7,000 are Moslems, and the rest Christians, with a few Jews. The Christians are divided between Syriac Church, Nestorians, and Armenians. The Syriacs, who are the most numerous, have two churches in the tow-

(Cont.)
congregation understand, the vulgar tongue being the Arabic. Their patriarch showed to Mr. Buckingham a
handsome copy of the Gospels in Syriac, written on parch-
ment, richly illuminated, and bearing the date of 1150.
Mardin has eight mosques, several bazaars, and some
public baths. The castle, which is built on the summit of
the hill above the town, is strong by its situation. The
mardin is nearly half-way between Diarbek and
Mardin, and on the road from Constantinople to Bagdad.

MAREMME, the name given in Italy to the unwhole-
some lowlands which extend along the coast of the Medit-
eranean. The name is especially applied to the lowlands
of Tuscany and of the Papal State, which are the most
extensive and most valuable, extending from the basin
to the sea-coast as far as Leghorn, south of which town
the ridge of Montenero projects as far as the sea-coast.
This basin extends inland from ten to twelve miles to the
hills east of Massa; it also includes the lowest part of the
countryside on both the Scrchio and the Arno, and is called Maremma
Pisana. The next basin is that of the Cecina, a river which
enters the sea about eighteen miles south of Leghorn. This
basin, which is called the Maremma of Volterra, is of
small extent, and its drainage relation to the sea is
south of the mouth of the Cecina. The third basin begins at Piombino,
and extends as far as Monte Argentario, a dis-
tance of about 60 miles in a direct line. It stretches
from 10 to 12 miles inland between the rivers Cornia, Brun,
Ombrois, and the lakes of the Lago Liscia, and the
lakes or marshes of Castiglione and Orbetello. This large tract is
called Maremma Senese, because it forms part of the
province of Siena. It is also called the Maremma of Grosseto,
from the town of that name which is situated in the midst
of it. A description of these tracts, which constitute the
Tuscan Maremme, is given under Pisa and Siena (Pro-
cinces).

The Roman Maremma, which is a continuation of that of
Siena (for there is no such body of land near the coast
between one state and the other), begins at the river Pesca,
which marks the boundary of the two countries, and ex-
tends as far as Terracina on the frontiers of Naples. The
whole of this tract, of more than 120 miles in length, is low and
monotonous; but its depth of soil varies, owing to various offsets of the lower Apenines, and also
to detached ridges which approach the sea without coming
close to it, and which partly enclose the lowlands. The
Roman Maremma may therefore be divided into three
basins, each as their own personal property. The banks of that lake and the course of its outlet, the river
Mart, as well as the rivers Flora, Arno, and Mignone.
The mountains of Santa Flora, on the borders of Tuscany,
bound this basin on the north-west; and Mount Cimino,
which was one of the loci of ancient justice, was its
source from the basin of the Tiber. The lower steps of the ridge
of Cimino approach the sea at La Tolfa, near Civitavecchia.
This basin, which generally called the Maremma of Corneto,
includes the districts of Corneto, Montalto, Canino, Castron,
and their environs. A description of it is given under Pa-
lal States.

The second basin, that of the lower Tiber, extends from
Civitavecchia to Anzio. The volcanic ridge of the Alban
Mount divide it on the north-east from the basin of the
Poverty, and the Marsala. A description of both, with some
account of the various phenomena of the soil and atmo-
sphere, is given under Campagna di Roma. The Ma-
remin is of two kinds; some are marshy, and others dry,
but all are unhealthy; and they are destitute of
the produce of the vine.

The name of Maremma is not commonly used in the
kingdom of Naples to designate the unhealthy lowlands
of that country, which are also extensive, but the synonymous
word Paduli, a corruption of paludi, is used instead.
The Paduli are divided by olive and cypress gardens;
the latter have been greatly improved in its Maremma; the
marshes have been drained, the lakes embanked, the ground has been brought into tillage, and colonies established. The government
has published an interesting account of the works executed for
those objects, with an atlas, fol. Florencia, 1838.

MARENGO. [Alessandra; Bonaparte.]
MARENZIO, LUCAS, certainly the most voluminous,
and, in the opinion of many, the best of all the composers
of madrigals, was born at Concagia in Brescia, about the
middle of the sixteenth century. His parents were poor,
but his fine voice recommended him to the protection of the
principal ecclesiastic of the place, who had him instructed
in music by Giovanni Contini, the author, we are told,
of 1465. His first appointment was as maestro di Capella
to the cardinal Luigi d'Este, and at Rome, says Adami, he was rewarded with various
pleasures, and among the number by the pope of
the kingdom of Poland, on whose invitation he paid a visit to the dominions
of the king of Poland. In his last years Marenzio, who was
denied to the pope, to into the pope's
court, but in what capacity does not appear; Peacham
says as organist; Dr. Burney denies this, assigning as
the reason of his disability, that in the papal court there
is an organ. When Marenzio, as Cesari, describes him as a 'little black man,' and
mentions the first, second, and third parts of his Thyrsis,
as 'songs the Muses themselves might not have been ashamed
to compose.' He died at Rome in 1599.

The collection that the Italians described as il piu dolce cigno (the sweetest swan),
and the praise thus poetically expressed was perfectly just. In-
deed as respects tenderness of air and gracefulfulness of har-
mony he has few rivals. In vigour of imagination he has
superiors, but in freedom of invention, in the art of
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writing, and

MARET. [Alexandria; Egypt.]

MARGARET, daughter of Waldemar III, king of
Denmark, married in 1363 Haquin, king of Norway, on
the death of Olaus (Hi. 1097). In 1376, when Haquin's son Obus,
then a minor, succeeded to the crown of Denmark under
the guardianship of his mother. His father Haquin dying,
Margar was acknowledged queen of Norway. Olaus
died in 1387, and the Danes also acknowledged Mar-
get as queen regnant, and the same Olaus, son of
king of Sweden, who was not popular with his subjects,
defeated him, and made him prisoner, and was then ac-
knowledged queen of Sweden. After seven years' con-
finement, she released Albert, on condition of his
overthrow of the dethroned sovereign of Sweden.
The three kingdoms assembled at Calmar, where it was
agreed that in future they should all be ruled by one
and the same sovereign. This act was called the 'Calmar
Union.' On this occasion Margaret designated her nephew
as her successor. She died in November, 1411, being
59 years of age.

Margaret had many great qualities; but her political
conduct, especially in her transactions with Sweden, was not
free from duplicity and violence. To the Danes however
he proved a good queen. She loved pomp and splendor,
was brave and resolute, and had rather the qualities of the
stronger sex than those of her own. [Erick XIII of

MARGARET OF ANJOU. [Henry VI.]

MARGARET OF RICHMOND. [Henry VI.]

MARGARIC ACID, a fatty acid, so called by Chevreul,
who discovered it, from margarites (margarites), a pearl,
ont account of its peculiar lustre. It is prepared from soap
bars with olive oil and alkali; this process gives a hard
and mealy for twenty-four hours in twice its
weight of cold alcohol. The oleate of potash, which the
soap also contains, is dissolved by the alcohol, while the
margarate of potash remains unacted upon; this is to be
washed with cold water, and then dissolved in 200 parts
of boiling alcohol: on cooling, the margarate of potash
and the oleate of potash crystallizes; and as it contains a little oleate, it is to be
crystallized a second time: it is then to be decomposed, and
the margaric acid precipitated by the addition of hydrochlo-
ric acid.
The properties of this acid are, that on cooling, after fusion, it crystallizes in nearly needles: it is insoluble in water, and hence its precipitation from its compounds and solution by the stronger acids. It has an acid reaction; and its salts, except those of the alkalis, are very sparingly soluble in water. Its saline compounds are termed margarates.

Margaret, or Potash, is obtained as above stated by the action of alkali on soap made of olive-oil and potash; it separates from its solution in boiling alcohol in brilliant colors: with ten times its weight of water, at about 15°, it forms a limpid solution, which begins to become turbid at about 140°, and at 60° it becomes gelatinous; a larger quantity of water partially decomposes it, and converts it into bimargarate: at 55°, when exposed to a moist atmosphere, it absorbs its weight of water without becoming liquid; 100 parts of alcohol are capable of holding 121 part in solution when cold, 10 parts when hot. Either, when heated, it forms a bimargarate.

Bimargarate of Potash is soluble in hot alcohol, 100 parts of its solution (of sp. gr. 0.834) dissolving 31.17 parts at 46° Fahr., of which however only 1-13 part remains dissolved at 68°.

Margarates of Soda strongly resemble those of potash: the ratio of the weight of water to that of the mixture, when it has been exposed to 10 times its weight of water at 172°, and the solution becomes gelatinous at 148°, and contains a little acelous salt.

Margarates of Lead.—Of these there are three, a sub-neutral, and super-salt. The neutral is produced by double decomposition; it consists of combined water, and fuses at about 176°: boiling alcohol of sp. gr. 0.823 dissolves about of its weight; it is less soluble in boiling ether.

When fat is boiled with the alkali, as in preparing soap, it appears in solid parts of the crystals, and either in anything to or absorbing anything from the air, are converted into one or more fatty acids and glycocerin; to these changes the elements of the water however contribute; the new acids, combining with the alkali, form soap, which collects on the surface of the fluid, while the glycocerin remains in solution.

Margarine, a peculiar fatty matter contained in vegetable oils, and also in animal fats, as mutton-suet and hog's-lard; when these have been treated with ether, for the prevention of the splitting of the ethereal lipoids, by spontaneous evaporation, deposit a portion of the solid matter which they contain, and this is to be collected on a linen cloth, strongly pressed, and then exposed for a long time to the heat of a salt-water bath. This substance is variously called either stearin, or stearic acid; it becomes converted into stearin. It appears probable however that by boiling in alkaline solutions it is converted into steaeric acid; but additional experiments are required to determine its nature with precision.

Margaretia, dr. Leach's name for the 'Concha margaritaria' or Meris lararium, Meleagrina margaritifer of Lamarc. [Avicula]

Margaretacea, m. de Blainville's name for his third family in his 'branchiales'; this family comprises the Crenatula, Vallesia, Melanome, Pierina, Cremaulia, Jaccadus, Catellus, Pulvinaria, Gervilus, and Aricula. [Avicula: Mollacea]

Margaritaceous. When eight parts of castor oil are saponified by two parts of potash dissolved in four parts of water, by heating them together for some minutes the oil is rendered completely soluble in water. MM. Bussy and Leucon have discovered in this soap three different fatty acids, the margarite, ricnine, and elatinoid, which are obtained by the distillation of the tri-acids of the hydrochloric acid. These acids form a reddish yellow oil, which at a temperature of about 60° Fahr. deposits a small quantity of solid matter, which is the marginic acid. This is to be pressed between folds of blotting-paper, then dissolved in alcohol, in which it separates by a solution in very small scales which reddens limbus paper. This acid fuses at about 270° Fahr.; its saline compounds, which however are but little known, are called margarites. According to Bussy and Leucon the hydrazated margaric acid is composed of—

Hydrogen, 10.50; Carbon, 70.50; Oxygen, 18.59.

Margarieon, a solid white fatty matter which crystallizes in poorly scales, and is obtained by distilling margaric acid with excess of lime. It fuses at about 170° Fahr., is in tiny, soluble in fifty times its weight of hot alcohol, and five times its weight of water. It consists of a number of heat in close vessels it distils almost unchanged; it burns in the air with a brilliant flame. Nitric acid sets it slightly upon it; sulphuric acid chars it, and sulphurous acid is given out. The alkali do not act upon margaric acid.

This is composed of—Hydrogen, 11.24; Carbon, 83.37; Oxygen, 8.21.

Margate, a seaport town on the coast of Kent, in the parish of St. John, hundred of Kingsley, and Isle of Thanet, 40 miles east-north-east from Maidstone, and 45 from London. It is a market town, and derives its name from Margate, a small fishing-village, about a mile distant from the town. Three miles west of Margate is a magnificent scene of sea-bathing, known as Margate. It is probably derived from Meregates, signifying an opening or cove into the sea. Hasted, in his 'History of Kent,' published in 1799, says, 'The town of Margate was till of late years a poor inconsiderable fishing-town, built for the most part in the two waggis, and containing scarcely more than 1000 souls; in general mean and low; one dirty narrow lane called King Street having been the principal street of it.' At present the principal streets of Margate are regularly constructed and well paved, and lighted with gas, and many handsome houses have been built. There is a public library, a printing-office, and a theatre. The means of steam-vessels must be attributed the rapid increase in the population of the parish of St. John, which in 1831 amounted to 10,339. A handsome new church has been built at Margate within these few years. There are hospitals of St. Mary, Draper's, and the vicar, established in 1633, and in 1799, assisted by committees which had been formed in London and Margate. The object of the founders was to enable poor people to participate in the advantages of sea-bathing. The building consists of a central building and two wards, containing in all upwards of nearly one hundred patients. The national school offers gratuitous instruction to about 400 children of both sexes.

The present stone pier was erected under the superintendence of Benezet, America, at an expense exceeding 100,000. It is 900 feet long, and at its extremity is the lighthouse, built from a design of Mr. Edgerton. The erection of this pier has added greatly to the safety of the harbour, which is much exposed to winds from the north-east. Margate is within the jurisdiction of Dover, one of the Cinque-ports. In the year 1787 the inhabitants thought their town of too much importance to be longer subject to this jurisdiction, and accordingly applied to the crown for a charter of incorporation; but upon the case being heard before the attorney-general, the petition of parts was so strong that their petition was refused, and since then the application has not been renewed. [Cinque-Ports]

(Hasted's Hist. of Kent; Beauties of England and Wales; Population Returns.)

MARGARET, the eldest child of Charles VI. of France, emperor of Germany. [Charles VI.] In 1724 Charles, by his will, known by the name of the Pragmatic Sanction, regulated the order of succession in the family of Austria, declaring that, in default of male issue, his eldest daughter should be heiress of all the Austrian dominions, and her children after her. This was directly opposed to the diet of the empire, and by all the German princes individually, and also by several other powers of Europe, but not by the Bourbons.

In 1736 Maria Theresa married Prince of Lorraine, who by the peace of Vienna of the preceding year had been recognized as the future grand-duke of Tuscany, after the death of Gian Gastone, the last offspring of the house of
the torture in her hereditary states, and in the kingdoms of Hungary and Bohemia. In 1777 she abolished the rural and personal services which the peasants of Bohemia owed to their feudal superiors, and ordered them for a sum of money. Literary piracy was forbidden under severe penalties.

Between the years 1774-8 she occupied herself with the establishment of a general system of popular education in her dominions. She divided the schools into three classes: 'principal schools,' in the large towns; 'ordinary schools,' in the small towns and villages. A director had the superintendence of the normal schools; those of the large towns under the purchase of the local council; communal schools under the parish priest and an assessor of the communal council. A central commission of studies was also appointed to superintend the whole, which received annual reports, and examined candidates for the master's

Maria Theresa was a pious woman: she was a sincere Roman Catholic, and wished to have a church established in the court of Rome, and she knew how to discriminate between the temporal and spiritual jurisdictions. In her instructions to the Junta, or Board of Public Economy, dated June, 1768, she states the principle that 'everything which is not of divine institution is subject to the sovereignty of the state.' Agreeably to this principle she made several important reforms in the temporalities of the clergy: she suppressed the pensions charged at Rome upon benefices; she forbade the landed clergy to reside in their benefices, and imposed upon them the obligation of attending the convents of the respective bishops; she ordered the clergy to be registered; she placed the revenues under the jurisdiction of the respective bishops, and in temporal matters under that of the civil magistrate. She put a check to the practice of the magistrates of papal origin in their Italian dominions: she took out of its hands the censorship of books and gave it to a commission of civil magistrates appointed for the purpose. In Tuscany, which was administered by a council of regency in the name of her second son Leopold and her third son Joseph, she resolved that it should be joined to the inquisitors in all suits for heresy. She also took away the shirrli, or armed force, which was before under the orders of the inquisitors. The Inquisition of Lombardy and Tuscany was finally abolished under the reign of her successor Joseph II.

Maria Theresa possessed the strong affection of her Belgian subjects, and it required all the subsequent rashness of Joseph II. to detach them from their loyalty to Austria. The Belgian capitalists eagerly supplied the loans which the court of Vienna was obliged to contract during the Seven Years' War.

In Lombardy the administration of Maria Theresa and of her minister Count Firmian was a period of returning happiness for that fine country, after the vicissitudes of the preceding long wars and the misrule of the Spanish governors. The empress ordered a new census, or valuation of estates, for the purpose of an equitable assessment of the land-tax; she caused the bilanio, or regular budget of the public revenue and expenditure, to be made; she abolished the superintendency of the various branches of the indirect duties to the highest bidder, made regulations to protect the peasants against the oppression of their feudal superiors, and established representative communal councils as in the civil jurisdiction. She began, in short, and effected to a considerable extent, that great legislative and administrative reform which was completed under her successor Joseph II. Firmian encouraged men of learning, and protected them against the calumny of their enemies. The director general of the school of painting and president of the financial board, Boccari, was appointed professor of political philosophy; Carli was made president of the council of commerce; and the advice and suggestions of these men were listened to, appreciated, and followed. The naviglio, or navigable canal called the Adda to the Mantuan, was executed under Maria

The improvements which Maria Theresa made in her dominions are many and important. In 1776 she abolished
Thereza. In 1759, soon after she obtained peaceful possession of Lombardy, the duchy of Milan contained 900,000 inhabitants; in 1770 the population had increased to 1,130,000, and to this day remains as the noble and rich, that she listened benevolently to all, either granting their petitions, or, if she denied them, giving reasons for her refusal, without illusory promises or vague circumlocutions. She declared, just before her death, which happened on the 29th November, 1780, that if anything reprehensible had been done in her name, it was certainly without her knowledge, as she had always wished the welfare of her subjects. During a forty years' reign she always showed a love of justice and truth, and she started a project of her own, that it is only in the assurance of alleviating distress and doing good to the people that can render the weight of a crown supportable to the wearer. (Bossi, "Storia d'Italia," b. vi., ch. 15.) Another merit of Maria Theresa is the propriety of her private character, Mariana returned to Alcalá to resume her studies, and self-respect, united with much simplicity of manners, which is become a distinctive characteristic of the Austrian imperial family. Maria Theresa will ever rank high among illustrious women, and among those who have been called the favourite of mankind. With her ended the house of Austria Habsburg, and at the same time began the present dynasty of Austria Lorraine.

Frederic II. appeared really affected when he heard of the death of his cousin, Maria Theresa. Wrote he to Q'Daumont, "I said that although he made war against her, he had never been her personal enemy; that he always respected her, and that she was an honour to her sex and the glory of her throne." "MARIANA JUAN," was born at Talavera in 1536. He early showed great talents, which were developed under the eminent teachers of the university of Alcalá, such as Father Cyprian of Huerga and others. At the age of seventeen Mariana joined the Jesuits, who had passed into the heart of the Spanish people, and which attracted to them the ablest students. He had to pass two probationary years at Simancas, under Saint Francis of Borja, the hereditary duke of Gandía, and favourite of Charles V., who had renounced the world to join the new order. After this probationary period he proceeded to Madrid, in 1565 he was appointed to a professorship by Laynez, the second general of his order, who framed the rules of the Jesuits, raised their aspirations, prepared them for the influence which they afterwards exercised, and opened their sublime path, at Rome.

In this college, Mariana, at the age of twenty-four, taught scholastic philosophy and divinity. Among his pupils was the young Jesuit (afterwards cardinal) Bellarmine. Mariana was sent in 1572, to open a college of divinity in Sicily, and afterwards in 1574, to the University of Valencia, in which he was still more successful. Seven years of unremitting application in an ungenial climate so greatly impaired Mariana's health, that he was permitted to retire to Toledo, near his birthplace. But his talents and moral worth were still in requisition. He restored and edited the works of Saint Isidore, to which he added some valuable notes. When Leon de Castro questioned the orthodoxy of Arias Montano, for introducing Rabbinical readings and confusions into the "Placentina," or "Planipina Polyglott," a new edition of the "Complutens," which Montano had undertaken at the command of Philip II., Mariana silenced the noisy polemic by his historical, ecleciastical, and biblical lore, as well as by the fair and candid tone of his reasoning in general.

In the mean time he proceeded during his leisure hours with the great work which he had long contemplated. He had observed that the sudden rise and ascendency of Spain excited a general interest and curiosity abroad, while its origin and cause were either unknown or misunderstood. The Spanish historians, though numerous, were at that time little read, and some of them were hardly known. His "History of Spain," first appeared in twenty books, under the title "Historia de rebus Hispani," fol., Toleti, 1582, and was subsequently translated into the Italian, in which form it appeared in the complete edition of 1605, published at Mainz. This compact and lucid exhibition of an unbroken chronological narrative, from the origin of the Spanish nation to the death of Ferdinand the Catholic in 1516, was described in three volumes, and at the expiration of forty years, 1526, the entire history of the different kingdoms, which had been treated separately. A subject so extensive, expressed in classical Latin, met with universal favour and acceptance. A Spanish translation soon became necessary, and fourteen new editions were published, the work through four successive Spanish editions in his lifetime.

Mariana has been charged with credulity, but traditions held sacred in times past, although rejected in the present day, have much weight, and can be of importance in the history of the world, events which appear as mere trifles to the cold and composed mind with those peculiar connections belonging to the history of Spain.

The many feelings of the historian, his noble indignation against crimes, his bold exposure of the misdeeds of princes and their doctors, deserve still higher commendation. Yet, as well as Heredia and Mariana, he had a gross instance of Queen Urania's licentious conduct; but on the other hand, the defence of Queen Blanca's honour might be creditable to Mariana. It is true also that Mariana did not shun the practice of politics, and serves in the "Kritik neuerer Geschichteschreiber," but to institute an inquiry into every minor detail, to comprehend a wide field of inquiry, and yet to open new and to elude the trodden path, would have required the whole of his life. The writer who makes an abridgment for the purpose of bringing into the general reader the truth of the people's history, without the aid of that kind, is to be commended, and the following extracts of Mariana's work, which are found too original and faithful by the living: as in the case of the Conde de Castile, Fernandez Velasco, his worthy secretary Pedro Montana. The secretary, after being a penitent of the new historian, tried to serve them by his annals, and the Castilian histories, which were found too original and faithful by the living: as in the case of the Conde de Castile, Fernandez Velasco, his worthy secretary Pedro Montana. The secretary, after being a penitent of the new historian, tried to serve them by his annals, and the Castilian histories, which were found too original and faithful by the living: as in the case of the Conde de Castile, Fernandez Velasco, his worthy secretary Pedro Montana. The secretary, after being a penitent of the new historian, tried to serve them by his annals, and the Castilian histories, which were found too original and faithful by the living: as in the case of the Conde de Castile, Fernandez Velasco, his worthy secretary Pedro Montana. The secretary, after being a penitent of the new historian, tried to serve them by his annals, and the Castilian histories, which were found too original and faithful by the living: as in the case of the Conde de Castile, Fernandez Velasco, his worthy secretary Pedro Montana. The secretary, after being a penitent of the new historian, tried to serve them by his annals, and the Castilian histories, which were found too original and faithful by the living: as in the case of the Conde de Castile, Fernandez Velasco, his worthy secretary Pedro Montana. The secretary, after being a penitent of the new historian, tried to serve them by his annals, and the Castilian histories, which were found too original and faithful by the living: as in the case of the Conde de Castile, Fernandez Velasco, his worthy secretary Pedro Montana. The secretary, after being a penitent of the new historian, tried to serve them by his annals, and the Castilian histories, which were found too original and faithful by the living: as in the case of the Conde de Castile, Fernandez Velasco, his worthy secretary Pedro Montana. The secretary, after being a penitent of the new historian, tried to serve them by his annals, and the Castilian histories, which were found too original and faithful by the living: as in the case of the Conde de Castile, Fernandez Velasco, his worthy secretary Pedro Montana. The secretary, after being a penitent of the new historian, tried to serve them by his annals, and the Castilian histories, which were found too original and faithful by the living: as in the case of the Conde de Castile, Fernandez Velasco, his worthy secretary Pedro Montana. The secretary, after being a penitent of the new historian, tried to serve them by his annals, and the Castilian histories, which were found.
which his countrymen Lebrija or Nebrija, Diego Covarrubias, Pedro Ambrósio Morales, and Aires Montano, had trusted before, and which Eisenach, Freret, Paucoton, &c., have pursued much further since. The noble character and the profound erudition of Mariana are also displayed in his Tratatus Septem, College, 1619. The second of these treatises, De Edificis Vulgatis, is an epitome of his report on the fierce contest between the Jesuits and the Franciscans, and contains a summary of the first. The fourth, De Mutatio Monete, provoked the indignation of the duke of Lerma, and his partners in the system of general persecution and frauds which Mariana exposed. He seized and calumnied which threatened the Spanish nation; and his words were never forgotten. It is not remembered when the opportunity was gone. As a reward for proclaiming such unwelcome truths, at the age of 73 he suffered a whole year of judicial trickery, humiliations, and calumnies, before the convict of St. Francis at Madrid. In searching his papers another fact was found in the Del Gobierno de la Compañía, or on the defects of his order, in which he also pointed out the means of correcting them. Copies of this MS. had multiplied so alarmingly, that, on the year after the author's death, the general of the Jesuits, Vitaloschi, issued a circular, dated Rome, July 29, 1624, enjoining the collection of such papers in order to be burnt. Still that measure did not prevent its being printed at Bordeaux in 1625, and reprinted elsewhere in several subsequent years. It contained, an act of cruelty the more odious as it was entirely useless. They brought her to trial before the convention. She was of course found guilty, and condemned to death. In the presence of her judges her fortitude never forsook her, and the burst of indignant maternal feeling with which she appealed to the mothers who might be there present, when an infamous and absurd charge was brought against her, overawed even her accusers.

On the 16th of October, 1793, Marie Antoinette was removed in a common cart from the prison of the Conventerlo to the place of execution. On her way she was reviled and abused by the ferocious mob in the most unfeeling manner; but she appeared heedless of their vociferations, and suffered death with firmness and composure. She was forty-two years of age, but her sufferings had given her a much older aspect. She had seven children, and was the present duchess of Angoulême.

MARIE DE' MEDICI, the daughter of Francis I., grand-duc of Tuscany, and of the archduchess Joan of Austria, was born at Florence in 1573, and was married in 1590, to Henry IV., of France. She was handsome, and Henri was for a time really attached to her; but she was violent, jealous, and obstinate, and seldom passed a week without quarrelling with her husband. The memoirs of her life are full of these domestic bickerings. But the best historical critics acquit her of any more serious misconduct, and especially of the odious insinuation thrown out by some writers, that she was privy to the murder of her husband. Henri at that time was just going to set off energetically to the effect his intention to leave her regent of the kingdom. Bérard only observes that she did not show sufficient grief for the death of her husband. Mary, in a sense of dignity, with her husband's minor, she found herself incapable of bearing the weight of the admi.

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nistration. [Louis XIII.] She next quarrelled with her son, and made peace with him by means of Richelieu, whom she made jealous of his great influence, and plotted against him. She was exiled, A.D. 1630; went to Belgium, England, and Germany; and at last died at Cologne, in 1643, in a state of bordering on devastation.

The Guadaloupe is an island in the Caribean Sea, about 15 miles south of Guadaloupe. It is of a circular form, and about 14 miles in diameter. This island was discovered by Columbus in 1493, and was first settled by the French in 1647. It has always been considered a dependency of Guadeloupe, and has now followed the fate of that island when taken by any foreign power. [Guadaloupe] The surface of Marie-Galante is of moderate elevation, and rises gradually towards the north; the western side is flat. The soil is productive, and yields an abundant crop of sugar cane. The exports and imports having always been included in the official statements with those of Guadaloupe, we have no record of the amount of its productions. The same course has been followed with regard to other statistical details, and we are therefore constrained with the amount of the population. Some authorities state it to be about 10,000.

The only town, Baseterre, stands on the south-west point of the island, in 15° 32' N. lat. and 61° 22' W. long.

MARI-MAINS, SAINTE. [Kuhl, Haut.] The town is situated in the plain of Mandeville, in 50° 4' N. lat. and 16° 45' E. long., at an elevation of 2000 feet above the level of the sea. It has mines of silver, iron, tin, and cobalt, and produces arsenic and vitriol. The inhabitants, about 1800, work the mines, and raise Lisbon, calico, &c. The silver mines were discovered at the beginning of the sixteenth century, and the town was founded in consequence in 1519 by Henry the Duke of Saxony. It is well built, with straight streets, a handsome market-place, a church, an orphan asylum, and an institution for poor or disabled miners.

MARIENBURG, a town of West Prussia, in the government of Danzig, is situated in 54° 1' N. lat. and 19° 2' E. long., on the banks of the Nogat, over which there is a pontoon bridge 2700 feet in length, the old bridge having been the seat of the Grand-master of the Teutonic Order from the year 1309 to 1466. The ancient castle, and the lofty towers and parapets, which are the remains of the old fortifications, give it, when seen at a distance, a grand and striking appearance. The style of building is ancient but irregular. Here and there are some more modern edifices, especially in the principal street, which however do not harmonise with the general character of the architecture. In front of the houses on both sides of the streets there is a continuation of the gardens, the original plan of which dates from 1276 by the Teutonic knights. The remains of the castle of the Order are extremely grand, and his royal highness the crown-prince of Prussia has caused it to be repaired and partly restored to its original condition, and the government offices stand on the rampart, outside of which are two suburbs. There are extensive breweries and distilleries, and some manufactures of linen, woollen, leather, and cotton, but scarcely sufficient for the consumption of the town. The inhabitants carry on a considerable trade in the exportation of corn, timber, and fish, and likewise in the less important articles of quills and hogs' bristles. The population, 9000 in number, are chiefly Roman Catholics and partly Lutherans.

The city of Marienwerder, one of the five governments into which West Prussia is now divided, lies between 52° 46' and 54° 6' N. lat. and 16° and 21° E. long., and is bounded by the north by the government of Danzig, on the east by that of Königsberg, on the south by Poland, on the south-west by Prussia, and on the north by Pomerania. Its area is 6800 square miles, and the population 460,000. The government is divided into 13 circles.

The circle of Marienwerder contains 343 square miles, with a population of 43,000.

Marienwerder, the capital, situated on the Liebie and the Little Nogat, two miles from the Vistula, over which there is a pontoon bridge 2700 feet in length, has 5500 inhabitants. It is a very neat town, with four suburbs, and has considerably increased during the present century. It is the seat of the provincial government and the government court. There are manufactories of woollens, hats, soap, and leather. The breweries and distilleries are very considerable.

MARIENZELL, or MARIAZELL, a small town in Upper Styria, the most celebrated place of pilgrimage in the Austrian dominions, is situated on a level plain in the midst of an extensive valley. It consists of only three streets, with 120 houses, of which nearly 50 are inns and taverns, and the population does not exceed 1000. The most considerable edifice is the church, built in the Gothic style, in which the Virgin Mary is supposed to have appeared to the inhabitants of the Virgin Mary, in 1261. The church has been restored and enlarged many times, and the most recent restoration was made in 1827, when the whole town, except nine houses, was reduced to ashes. The roof and the steeples of the church were destroyed, but the treasury and the statues of the Virgin Mary were saved. It was however necessary to raise the town again, which is now more splendid than ever. The number of pilgrims that resort thither from all parts of the Austrian monarchy is estimated at 100,000 every summer. Under the reign of the emperor Joseph II., all processions of processions were permitted in the town.

The procession, in 1819, consisted of about 12,000 pilgrims, who, being handsomely dressed in the costume of the several provinces from which they came, presented a striking and interesting picture of the whole

MARIE'STAD. [Sweden]

MARIKINA. [Midas]

MARINGDONA. [Atley, vol. ii, p. 547.]

The modern idea of a fire insurance is founded on the principle upon which insurance are made, whether of property against the chance of fire, of human life against the accidents or contingencies of mortality, or of ships and their cargoes against the multiplied risks to which they are exposed, is the same, viz., that of reducing to each individual in every case, the possibility of loss down to the average loss of a great number of individuals or cases. Marine insurances differ however from fire and life insurances in the mode of conducting the business, as well as in the diversified nature of the risks, the operations of which are far more complicated. In the case of fire insurance, the time of peace includes the chances of fire, of piracy, of barony of the master or crew, &c. The running away of the vessel by these parties, as well as the ordinary mechanics resulting from storms, sunken rocks, tides, and the like.

There are, however, a number of cases of capture by an enemy, and all restraints of foreign powers or governments.

Until a recent period nearly all the marine insurances effected in London, which is the great emporium of such insurances, were made by individuals who became answerable for comparatively small portions of the sum insured, suffering thus from other kinds of insurances where the whole risk was taken by a joint-stock association. Until 1824 it was not lawful for any two or more individuals to enter into any contract by which themselves or any of them would be bound for the payment of any sum insured, or for any of their joint insurers to join in any joint-stock company for the purpose of the insurance, and many joint-stock companies have been formed and put in action with advantage to the public. Before the year 1824, several insurance shares were in fact mutual insurance associations, and were considered illegal. In those that were not made of premium, but in each of which the price was periodically called upon to pay a proportion of the sums paid by the members to the club generally, the rate of contribution being made to depend upon the ratio of the profits to the losses. In this manner a risk, that would have been made good to those shares, which still exist, are usually confined to persons engaged in maritime business.
in particular branches of trade, such as the coal-trade of the North of England, where the risks incurred by the different members are generally equal in degree, a condition which is necessary in order to render the association equitable.

The policy, or contract of insurance, must contain the name of the ship, when known, and of the master, with the nature of the voyage, and must describe also in good faith any circumstances which are out of the ordinary or understood course in similar risks or voyages, such as any contemplated deviation, and be held in accordance with the usual practice in making insurances is sometimes done by the merchants or owners of the ships or goods insured, but more frequently through the agency of insurance-brokers, whose remuneration comes from the underwriters or insurance-offices, as the case may be. The premium is usually paid, according as the risk is determined, by the owner or the underwriters, with the amount of the gross premium in each case, and in a further allowance of 12 per cent. upon the net amount of premiums paid by them to the underwriters or offices at the end of the year, in reducing all losses and averages recovered for the assured.

The policy of insurance, when underwritten by the assurer, bears a declaration of the amount of premium having been paid, but in practice that payment is not made unless after the risk is taken, in which case the risks are taken, unless in the case of a total or partial loss, when all premiums outstanding upon the account of the merchant or broker, as the case may be, are allowed as a set-off against the amount of the loss. Where a premium is charged, the shipowner, and not his employers, for the amount of premiums, and they have recourse for the same only to the broker. As some compensation to the broker for the 12 per cent. allowance above mentioned, which forgoes in the event of a loss, he makes a charge against the merchant by whom he is employed of ten shillings for every hundred pounds upon the amount recovered.

The rate of premium varies of course with the nature of the cargo and navigation, and may exceed 5 per cent. of the value of the ship. As regards this latter point the underwriters and managers of insurance companies are enabled to judge with great accuracy by means of a register kept under the superintendence of a committee of merchants and underwriters, in which every necessary particular concerning every merchant ship is inserted from the surveys of competent officers appointed for the purpose, who are paid certain fees for their trouble by the owners. This register is of as much importance to the shipowner as it is to the underwriters, as the premium paid on the charge made for premium of insurance is less than where that quality is bad or doubtful; and in the event of loss it gives ready means for rebutting the charge of unseaworthiness than might otherwise be found, such a charge, when put in practice, would give the law to exonerate the underwriter from payment of the loss.

The losses for which underwriters are liable are either total or partial. In some cases it may happen that the claim upon an underwriter exceeds the amount of his subscription, as when a ship meets with damage, and after quitting a port where she has been repaired or refitted, is wrecked or otherwise lost. The claim in such cases would be not only for the amount expended in repairs, but also for the value of the ship or goods, when lost. Partial loss or damage is commonly made by fire, collision, or storm. There are two classes of general average and particular average. Under the first of these heads are included all losses of a part of the property voluntarily incurred for the preservation of the remainder, and not employed in the line upon which he was built; right her the masts are cut away, this constitutes a general average, and the loss must be borne in shares proportionate to their value by the owners or insurers, as the case may be, of the ship and the cargo. So if a ship lying at anchor should be in danger, the anchor might be cut away, the rigging and cable should be cut, or if to lighten her in a storm part of her stores or cargo should be thrown overboard, this would constitute a general average, and must be met by the owners or insurers of the whole property as before described. The period of the award and when the claim meets with damage from any of the chances against which insurance is provided, but which is not incurred voluntarily and to prevent a greater loss. In these cases the damage must be made good by the insurer of the ship or of the goods which are damaged, and not by a general contribution from all. Where this partial damage happens to the ship it is usual for the underwriters to reinstated the same, paying two-thirds only of the cost, being considered that the owners will benefit to the amount of the time. This is one of the more important articles in place of those in which have been lost, or by the better state in which the vessel will be placed by the repair. Goods which are peculiarly liable to damage, either from their nature or from the manner in which they are packed, but not entitled to claim particular average except the ship be stranded, or except the damage shall exceed a certain per centage of the value. Corn, seed, flour, fish, salt, and fruit are not liable to particular average, whatever be the amount of damage, except the ship be stranded; and tobacco, hides, and wax, which are light and of small value, being by the assured free of particular average, unless the damage should amount to five per cent. or more of their value, with the like exception as regards stranding.

It is not possible to give within reasonable limits more than an outline of the law as practiced in France, with marine insurers, concerning which many volumes have been published. Policies of insurance on sea risks are liable to stamp duties, which vary according to the nature of the voyage and the rate of premium paid. On coasting risks where the premium does not exceed 20s. per cent. the stamp duty is 1s. 3d. per cent.; and where the premium exceeds that rate it is 2s. 6d. per cent. On foreign risks, where the premium is not higher than 2s. 6d. per cent. the stamp duty is 1s. 3d. per cent.; and the premium is between 1s. and 30s. per cent. the duty is 2s. 6d. per cent.; and when the premium exceeds 30s. the duty is 5s. per cent.

Vessels engaged in voyages of long duration, such as the South Sea whaling-ships, or vessels employed in a particular line where the risk is unvarying, are sometimes insured for a specific time. The stamp duty in such cases is 2s. 6d. per cent. for a period not exceeding three months, or 3s. 6d. per cent. for periods of three months and upwards, but no time risk for a longer period than twelve months can be covered by the same stamp, and a new policy must then be taken out.

MARINER'S COMPASS. [COMPASS, MARINER'S.]—Marines, not enlisted to serve solely in the coast and board of ships of war in naval engagements; and on shore, in the event of a descent being made upon an enemy's coast. In the British service, they also assist occasionally in performing some of the operations connected with the working of the ships; these men, however, are but seldom sent aloft at the command of a naval officer.

Originally in this country, as well as in France, the national fleets were composed of merchants' ships, which were armed on occasion for war; and then there were no soldiers, particularly designed for the navy. A service of this kind in France were men skilled in the practice of the useful trades, who, when unemployed by the government, lived on shore on half-pay; receiving only the full pay when called upon to serve at sea. This regulation did not however long subsist; and, subsequently to the administration of Cardinal Richelieu, companies of marine soldiers have been constantly retained on full pay.

It is not precisely known at what period distinct corps were appointed, in Britain, to this branch of the public service. In 1704, both in the French and English fleets, a maritime regiment of foot; and in the reign of William III. several regiments were placed on the establishment of the navy, but these were subsequently disbanded. At that time the maritime men were, to a great extent, considered as persons in training to become good seamen; and, in Burke's ' Naval History," quoted by Gosc (' Mil. Antiq., vol. i.), it is said that they were discharged from the regiments and entered on the ship's books as foremost-men as soon as they became serviceable.

In the beginning of Queen Anne's reign (1709), six regiments of maritime soldiers were raised; and among the regulations concerning their service it is stated that they were to be quartered, when on shore, near the principal ports. With the men there were to be paid at the same rate as the land forces, and the same destinations were to be made for clothing. As at sea they were to be allowed provisions equal in every respect to the shares of the seamen, without suffering any diminution of pay on that account.
In 1749, the then existing regiments of marine soldiers, ten in number, were disbanded; and six years afterwards, on the recommendation of Lord Anson, there were raised 130 companies, consisting in all of above 5000 men, who were put under the immediate command of the lords of the admiralty, and whose commissions were appointed to be Plymouth, Portsmouth, and Chatham. The corps of marines, as it was then called, has subsequently been considerably increased; in 1759 it numbered 18,000 men; and during the late war its strength amounted to about 20,000 men. This additional division was by an order of council in 1805, established at Woolwich; and there are two companies of marine artillery, whose head-quarters are at Portsmouth.

The marines are now clothed and armed in the same manner as the infantry of the line, and, like all the other royal regiments, their scarlet uniform has blue facings. In an engagement at sea, they annoy the enemy by a fire of musketry from the tops and deck; and they repel with the help of the sails of the ship, and with the guns, as the marines are familiarly called, have often distinguished themselves when acting on shore; and their meritorious services at the taking of Belleisle (1761), in the battle of Bunker's Hill (1775), in the defence of Acre (1799), and very recently, under Lord John Hay, on the coasts of Spain, have earned for themselves a lasting reputation.

The royal corps is commanded by a lieutenant and a major-general, who are naval officers holding, in addition to their rank as such, those military titles. There are also four lieutenants of division and four second commandants. No commissions in the corps are obtained by purchase; and the officers of marines rise in it by seniority, as high only however as the rank of colonel-commandant.

To the Duke of [SAN MARINO]
MARINOTTI, EDMÉ. Little is known of his life. He was a Burgundian born, a priest by profession, and resided in the earlier part of his philosophical career at Dijon. He was afterwards prior of Saint Martin, near Beaune, and director of the academy of sciences of that city. He was one of the first members of the academy of sciences. See the éloge by Condorcet, vol. i., p. 74, of his collection.

Several of the writings of Mariotte were published by himself, and one or two others. Those of the former class were several times reprinted, and the whole were finally collected under the title 'Ouvrages de Mariotte,' in two volumes quarto, Leyden, 1717. Another edition (perhaps the same with a new title) was published at the Hague, in 1719. A collection of his thoughts on perpetual motion, on vegetation, on the nature of the air, on heat and cold, on the nature of colours, on hydraulics, on some phenomena connected with light, on levelling, on the motion of the pendulum, on the conglomeration of water, and on the causes of the tides.

Condorcet says of Mariotte, that he was the first Frenchman who carried with him into experimental philosophy a spirit of observation and doubt, and inspired others with that caution and timidity which are so necessary to those who interrogate nature and knowledge. In a word, he kept a sharp eye on his responses. His writings, though more connected with mathematical deduction than those of Robert Boyle, somewhat resemble them in the miscellaneous character of the experiments with which they are crowded.

The name of Mariotte is known to a reader of modern works as the following:
1. He was the discoverer of that law of elastic fluids which now goes by his name; that is, of the elastic force being exactly in the inverse proportion of the space which a given volume of gas occupies. Subject to such alterations as difference of temperature may require, the formula derived from this law is now one of the fundamental parts of aerostatics.

2. He discovered that air, and air in a state of condensation, is a fluid.

3. He found that the part of the retina in which it meets the optic nerve is not capable of conveying the impression of sight.

Among minor matters, we may mention the now common guinea-feather experiment, which was first made with the air-pump.

MARITIME LAW. [ADMIRALTY COURTS; SHIPPING.] MARITZA, the modern name of the Hebrus, the principal river of Thrace. The basin of the Hebrus is enclosed between the chain of Haemus, or the Balkan, on the north, and Mount Rhodope, the modern Despotov, on the south, the first divides it from the basin of the Danube, and the other from that of the Strymon. [AMPHRIS: The Hebrus rises at the foot of Mount Rhodope, in about 42° N, lat. and 24° E, longitude; and in an easterly direction for more than 100 miles, receiving numerous affluents from both chains of mountains: it passes by Tatar Bazar, Philipopolis, and Chirmebeli (the ancient Ases), where it diverges to the southward, until it reaches Adrianople, where it is again joined by two large streams, the Tonja, or Toampe, from the north, and the Arda, or Harpesias. After passing Adrianople the Hebrus turns to the south, receives the Erkmen (the ancient Agriences), coming from the direction of Constantinople, flows by many small windings, enters the gulf of Enez by two mouths, opposite the island of Samothrace. The whole course of the Hebrus is above 300 miles. It is navigable for small craft as far as Adrianople, about one-third of its course.

After its military reputation. His friends took advantage of his increasing popularity at Rome to persuade the people that the war with Jugurtha would never be concluded until the command was given to Marius. This led to an open rupture between him and Metellus; and it was with the express advice of Marius that he appointed Tiberius Sempronius, with leave of absence to go to Rome in order to stand for the consulship. Marius was however unsuccessful; he obtained the consulship (B.C. 107) and the command of the Jugurthine war. On his return to Africa, Marius prosecuted the war with great vigour and success, and in the following year (B.C. 106) obtained possession of the person of Jugurtha, who was treacherously given up by Bocchus to his kinsman Sulla. [JUGURTHA.] Marius remained in Africa during the next year (B.C. 105); in which the consul Manlius and the praetor Atilius defeated Bocchus and Cumillus in Gaul, with the prodigious loss, according to Livy (42. 27), of 80,000 soldiers, besides 40,000 camp-followers. The news of their defeat caused the greatest consternation at Rome, especially as the Teutones and Cimbri threatened the immediate invasion of Italy; and the Senate elected consul in his absence, without any opposition ever from the patrician party, as the only man in the state who was able to save it from impending ruin.

Marius entered upon his second consulship (B.C. 104), and
Sulla was with the army at the time besieging Nola; but as soon as he heard of the law which had been passed, he marched to Rome; and Marius and his adherents were obliged to quit the city. After wandering through many parts of Italy, Marius escaped with the greatest difficulty to Africa; but he had not yet landed ere he found two battle lines, the one consisting of the Teutones and Ambrones (a Gallic people), through Gallia Narbonensis; and the other, comprising the Cimbri, by way of Noricum. Marius defeated the Teutones and Ambrones near Aqve Saturniae (Vercelli), which was on the foot of the Alps to oppose the passage of the Cimbri, retreated first to the other side of the Athesis (Adige), and afterwards quitted that position also without waiting for the enemy's attack. In the following year, a.d. 101, Marius, who was again elected consul for the fifth time, joined his forces with those of Catulus, and entirely defeated the Cimbri in the plain of Vercellae (Vercelli), situated to the north of the Po, near the Sesiaes (Sesia). In these two battles the Teutones and Ambrones are said to have lost the absolute power vested in the consuls. Marius, unable to take prisoners; and the Cimbri 200,000 men (140,000 slain, and 60,000 taken prisoners). (Liv. Ep. 68.)

Marius again became candidate for the consulship for the following year; but now that the fear of the Gallic invasion was passed away by the whole destruction of the patrician party. He nevertheless obtained the consulship, in great part owing to the exertions of Saturninus, the tribune, who is described as a man who scurried at the commission of no crime in order to retain his life; every one of the six tribunes of Mars which are some of the most important in this period of Roman history, are imperfectly narrated by the historians. It appears that an Agrarian law, proposed by Saturninus and supported by Marius, and one of the pretors, named Glacia, was carried, notwithstanding the most violent opposition of the patrician party; and that Metellus Numidicus was driven into exile in consequence of refusing to take the oath of conforming to the law. When the election of consuls for the ensuing year took place, Metellus, having obtained the tribunate for the office, was murdered by order of Saturninus; and the senate, receiving the city to be in a state of anarchy, passed the usual decree, 'that the consuls should take care that the republic should receive no injury,' by which almost absolute power was vested in the consuls. Marius, unable or unwilling to protect his old friends, besieged Saturninus and Glacia, who had seized upon the capitol. They surrendered themselves to Marius on the promise that their lives should be spared, but they were all immediately executed. Marius, after the blow which had been given to the popular party by the surrender of Saturninus and Glacia, would not have been able to save their lives, even if he had made the attempt.

At the expiration of his consulship, Marius went to Rome to avoid the reproach of the patrician party in the return of his old enemy Metellus, whose sentence of banishment was repealed after the death of Saturninus. According to Plutarch, Marius went to Cappadocia and Galatia, under the one of offering a sacrifice which he had vowed to Cybele; but with the real object of exciting Mithridates to war, in order that he might be again employed in military affairs, since he did not obtain much distinction in peace.

In 80 the Marian or Social war broke out; in which both Marius and Sulla were engaged as legati to the two consuls. Marius gained several victories over the enemy, but he no longer possessed that activity and energy which had distinguished him in his earlier years; and disgusted, it is said, with the increasing corruption of his command before the conclusion of the war. The Marian war had scarcely been brought to an end, before the civil war broke between Marius and Sulla. The command of the Mithridatic war had been assigned to Sulla, who was then 70 years old; but Marius made every effort to wrest it from him, and is said by Plutarch to have gone every day to the Campus Martius, and to have performed his exercises with the young men, although he was now in his 70th year and very corpulent, in order to show that he was not too old for the service of his country. This was supported by P. Sulpitius, the tribune, who possessed great property and influence; and a law was eventually passed that the command should be taken from Sulla and given to Marius.
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accurate and highly finished delineations of character, and
by the intimate knowledge which they display of the hu-
man heart. Mark is not one of these names which appear as a
motto under his name. He was not one of those who put on
morality as a holiday suit when they show themselves in
public; he did not, like Sterne, dip merely his pen in sent-
iment; nor was he, as too many others have been both
before and since, that sententious, pedantic, philosophic
writer, who has not completely belied. On the contrary, his
life illustrated the lessons which he endeavoured to impress
upon others. Benevolence to all, active sympathy for the unfor-
unate, and a philosophic indulgence towards wealth and
distinction. These dominant traits in his character. He
left his Paræa in 1763.

M A R J O R A M, an aromatic potherb, used in cookery,
especially among the French. It is the Origanum Majorianum
of Linnaeus, or Majorana hortensis of Munch, a native of
Cyprus, and thence he got his name. In the eleventh
century, it is said, it was introduced into France, and be-
came, on account of its medicinal usefulness, a little better
than an annual; in a wild state it is a suffruti-
cose perennial.

M A R K. [Monk.]

MARK, ST., the Evangelist, is supposed by the greater
number of writers to be the same person as John Mark, who
is mentioned in the Acts of the Apostles (xii. 25; xiii. 13; xv. 27).
It is most probable that John was his Jewish name, and that he
took the surname of Marcus when he went to preach among the
Gentiles. He was probably not born out of the city of Jerusalem,
in whose house the disciples were wont to meet (Acts. xii. 12),
and the nephew of Barnabas (Col. iv. 10). He left Jerusalem with Paul and Barnabas, about A.D. 44 (Acts. xiii. 2),
and accompanied them to their return to Antioch (Gal. vi. 2),
and from thence to Perga in Pamphylia, where he parted from
them and returned to Jerusalem (Acts. xiii. 15). About A.D. 53
we find him again at Antioch, when Paul proposed to Barnabas
to visit the Asiatic churches. Barnabas wished to take with
him this volunteer, but Paul hesitated account of his having deserted them in their former journey, they
separated from each other, and Mark accompanied Barnabas
to Cyprus (Acts. xv. 37-39). Paul appears to have been
reconciled to him afterwards, for when they were in the house
of Judas, in Jerusalem, during his imprisonment, and he is honourably
mentioned in some of Paul's Epistles (Col. iv. 10; Phil.
emon, ver. 24; 2 Tim. iv. 11). We also find him with Peter in
Asia (1 Pet. v. 19; see Steiger's Commentary on the First
Epistle to the Corinthians); it is from the traditions that he
accompanied that apostle to Rome. According to Eusebius,
Epiphanius, and Jerome, he afterwards went to Egypt, and
founded a church at Alexandria, where he died and was
buried, according to Jerome, in the eighth year of Nero's
reign, A.D. 60. It is said that on an earlier occasion he
lived in Rome. Whether these latter circumstances in his history will
warrant. All the early writers affirm that Mark was intimately
acquainted with St. Peter: Papias, Irenæus, and Tertullian
call him 'Peter's interpreter.' It has been supposed that he
was the one to whom Peter frequently wrote, in the form that
is called 'my soh' (see Kuinoel's note on Matt. xlii. 27).
Some of the later Fathers mention him as one of the
seventy evangelists; but there is no good authority for this
tradition, and it is contradicted by Papias, who expressly
says that he had heard from the presbyter John, who was
contemporary with the apostles, that Mark was not a hearer
nor a follower of Christ, but of Peter. (Eusebius, Ec. Hist., iii. 39.)

M A R K, ST. THE GOSPEL OF.
The genuineness and authenticity of this Gospel are attested by the
unanimous voice of ecclesiastical writers. Michaelis has indeed
objected to its canonical authority, in common with that of
Luke, but on no good ground. [LUKE, GOSPEL OF.] According
to Papias, Irenæus, and other early writers, Mark completed
writing the gospel which was preached by Peter; and Clement of Alexandria states that he did so at
the request of Peter's hearers at Rome. Other early writers add that in this work Mark had the approbation and assistance
of Peter; and many passages of the gospel have been thought to bear traces of being written under Peter's direc-
tion. From the tradition mentioned above, and from Latinisms and explanations of Jewish phrases and customs
contained in Mark's gospel, it appears to have been written
at Rome for the benefit of the Latin Christians.

The time when it was written is uncertain. Irenæus says that it was composed marù týn tòv ótòv (Peter and Paul)
[below]; but whether he means here the death of Peter and
Paul, or after their departure from Rome, is a ques-
tion. If this is the case, the most probable date
appears to be about A.D. 64 or 66.

According to the unanimous testimony of the early ecclesi-
astical authors, the gospel of Mark was written in Greek.
The Latin MS. at Venice, said to be part of St. Mark's
Bibliothec, has long since been proved to be nothing of
the kind.

The contents of St. Mark's gospel have been divided by
the three following parts:

Part I. The baptism and temptation of Christ ( Mark 1:13).
Part II. The public ministry of Christ, up to his last
journey to Jerusalem ( Mark 14—xix).
Part III. Transactions at Jerusalem, the death, resur-
rection, and ascension of Christ (xlii.—xvi.).

The opinion that Mark's gospel has no development of
Matthew is satisfactorily refuted by Michaelis; notwith-
standing the coincidences between these two gos-
pels, we find, on comparing them, that there are in Mark
omissions and discrepancies with what is contained in
Matthew, which it is difficult to account for on the supposi-
tion that they were written with the gospel of Matthew before
him. The true mode of explaining these coincidences and discrep-
ancies belongs to the more general question respecting
the origin of the first three gospels. [GOSPEL OF 3.]

Besides that each of the Evangelists had independent sources of information there are no sufficient proving Mark's qualifications for the task; for besides
the assistance which he probably received from Peter, with
which in his life proves that he must have had oppor-
tunities of constant intercourse with the apostles and first
Christians, St. Jerome, the compiler of the Latin Vulgate
(Lardner's Credibility and Lives of the Apostles and
Evangelists; Cave's Lives of the Apostles and Evange-
lists; Kuinoel, Comment. in Libr. Hist. N. T. Prope in
Hermes, the introductions of Michaelis, De Wette, Hess
and Horne).
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to another held within the distance of twenty miles, even though it be on a different day, but this presumption may be rebutted.

Formerly markets were held chiefly on Sundays and holidays, for the convenience of dealers and customers, brought together and conducted in the adjoining divine service. But in 1825, by 13 Edward I, c. 5, fairs and markets were forbidden to be held in churchyards; and in 1448, by 27 Henry VI, c. 5, all showing of goods and merchandise, except necessary victuals, in fairs and markets, was forbidden. The enactments, however, were not carried into effect, and fairs continued till the reign of Henry VI, to be held in churchyards, and in other parts of the town. The holding of fairs and markets on any day, on the fourth Sunday in any year, was forbidden in 1677, by 29 Charles II., c. 7.

The grantee of a market has a court of record called a common market; and, like other persons, he may be appointed to the office of a toll-taker or other officer, and for the prompt decision of matters arising in the market. [Princes Jeffrey.] Such a court being considered necessary for the expedition of justice and for the support of the market, the power of holding it is incident to a grant of a market; and no person would be considered as the legal grantee of a market, unless he was made entirely silent upon the subject.

Sales in markets may be of goods actually brought within the precincts of the market, or of goods not so brought. Goods not within the precincts of the market are sold without any pay or toll; and, as such goods are usually brought into the market for sale, it is incumbent on the lord of the market to take care that every thing be sold by correct and legal weights and measures.

For the security of dealings in markets, contracts were formerly required to be made in the presence of an officer appointed for that purpose by the lord of the market, for which service he received from the buyer a small remuneration called market-toll. [Toll.]

It is a breach of common law that every sale in market-overt (open market) be made by the buyer a complete property in the thing sold; so that however defective the title of the vendor may be, yet that acquired by the vendor is perfect, even where the property belongs to a person who is not a member of the society, as an infant, a married woman, an idiot, or a person in lunacy; and so it is binding upon every seller in market-overt for goods usually sold there. This rule is subject to certain exceptions and restrictions.

A sale in market-overt does not bind the rights of the crown; nor does it bind the right of others, unless the sale be in an open place, as a shop, and not a warehouse or other private part of the house, so that those who go along cannot see what is going, and not in a shop with the shop-door or windows shut, so that the goods cannot be seen. The articles sold are required to be brought to the market, or the buyer, and there offered for sale; and so the market is held every day for goods usually sold there.

The sale must be without fraud on the part of the buyer, and without any knowledge on his part of any want of title in the vendor. If the seller acquire the goods again, the effect of the sale in barring the true owner is defeated. The market is the place of delivery, and no alteration of any part of the goods is permitted; nor alteration of the goods, in goods pawned, or in goods sold to the real owner. The sale must be between sunrise and sunset, and must be commenced and completed in the market.

By 21 Henry III., c. 3, if any felon rob or take away money, goods, or chattels, and be indicted and found guilty, or otherwise attainted upon evidence given by the owner or party robbed, or by any other by their procurement, the owner or party robbed shall be restored to his money, goods, or chattels. If, however, the indictment, shall be brought against and upon the conviction of the offender, be restored to the prosecutor, notwithstanding any sale in market-overt.

As market-overt is very easily conveyed to distant markets, the legislature has frequently interposed to protect the owner against the consequences of a sale in market-overt. By 2 and 3 Philip and Mary, c. 7, 'No sale of a horse stolen, and does not bind the property, unless it stand or be ridden an hour after the sale, and both the buyer and seller be present at the sale.' The sale must be between sunrise and sunset, the mark, at the last, of the horse sold, and pay the toll, if any due, else a penny.' And further, by 31 Elizabeth, c. 15, 'No more shall be sold in any fair or market sell, or the exchange, or put away any horse, mare, &c., unless the toll-taker, book-keeper, bailliff, or other chief officer will take upon himself the knowledge of the person that shall so sell, give, or exchange any horse, &c., and of his true name, surname, and dwelling-place, and shall enter the same in a book there kept for sale of horses, or else he be selling or offering to sell, &c. any horse, &c., shall bring unto the toll-taker or other officer aforesaid of the same fair or market, one sufficient and credible person, that can make oath before the toll-taker, &c., that he knows the party that so sells, &c., or he shall not sell, &c., and his true person, name, mystery, and dwelling-place, and there enter in the book of the toll-taker or officer, as well the true name, surname, mystery, and place of dwelling of him that so sells, &c., as of him that so shall testify his knowledge of the same person, and shall also enter the true price that he shall have for the same horse, &c., and that no toll-taker, &c., shall take toll or make entry of any sale, &c., of any horse, &c., unless he know the party of whom the horse, &c., is sold, &c., and of any horse, &c., he shall be made one of the officers of the market, &c., and of every person making any untrue testimony, and every toll-taker, &c., offending in the premises, shall forfeit 5l., and that every sale, &c., of any horse, &c., in fair or market not used in these ordinances, is declared to be contrary to the order of the same. This Act shall be in force for the space of twelve months, before the mayor or other head officer of the town or parish, if the horse, &c., happen to be found in any town corporate or market-town, or else before any justice of the peace at the place where such horse, &c., shall be found, if it be on the cart or horse, &c., &c., or as proof be made within forty days, by two sufficient witnesses, before such head officer or justice, that the property of the horse, &c., so sold, was in the hands of such person, and was stolen within six months next before such sale, and that the party from whom the horse, &c., was stolen may at all times after, notwithstanding any sale in fair or market, have property and power to take again the said horse, &c., and to recover the same, or have the possession and interest of the same horse, &c., if he will accept it, so much money as the party shall dispose and swear before such head officer or justice of peace, that he paid for the same fide and without fraud or collusion.

This statute also extends to a horse taken by wrong, though it be not stolen.

By 1 James I, c. 21, 'No sale, exchange, pawn, or mortgage, of any jewels, plate, apparel, household stuff, or other goods, wrongfully purloined, taken, robbed, or stolen, and sold, uttered, delivered, or exchanged, pawned, &c., within London and its liberties, Westminster, or Southwick, or within two miles of London, to any broker or pawn-taker, shall work or make any change or alteration of the property or interest.'

No market is to be appointed to be held once, twice, or three times in a week, for the current supply of commodities, mostly of provisions. A large market held once or twice a year is called a fair; and, according to Lord Coke, a large fair holds 30,000 or 40,000 people.

Fairs have all the legal incidents of markets, and are subjected to further regulations by 2 Edw. III., c. 15, one of which requires, that at the opening of the fair, proclamation be made of the time it is to continue.

MARKET.

The more numerous markets are in the well cultivated country, provided they are at a sufficient distance not to interfere with each other, and on different days of the week, the greater saving there is of time and labour of conveyance. Good roads or navigable rivers are of great importance to a market-town; and if there are mills in the neighbourhood, where corn can be ground, they will increase the advantage to the farmer by causing a regular demand above what the immediate consumption of the place may require.
The vicinity of a good market where every kind of agricultural produce will always find purchasers at a fair price, greatly adds to the value of a farm, especially if good roads lead to it; and the advantage is the greater if it be a populous town, which not only consumes much produce from which a large surplus may be brought by the teams which have carried the produce to market. It is this which so much enhances the rent of lands near London and all great cities, and makes the agriculture there approach nearer to horticulture, which entirely depends on extraneous markets.

Few things are so bulky as corn; a sack weighing 240 lbs. when brought to market may be worth a guinea or thirty shillings, but if it is carried 50 miles to a market, the net value will be much reduced, and if it becomes a surplus beyond what is required for the immediate neighbourhood, and no means of exportation, a very small surplus will glut it, and reduce the price still lower. The nature and situation of the markets are consequently the determining agents in the whole commercial enterprise. Where markets are very distant, the only profitable produce is live-stock, which can be driven a long way at a small expense. All countries, however fruitful the soil, which are thinly peopled, and have no ready markets for corn, must necessarily be poor; in which case a field may be uncultivated. An increase in the population and the establishment of manufactures give rise to an increased number of markets, and bring more land into a state of profitable cultivation as arable land. If a regular supply of food has been the cause of the manufacture of population, so great a demand for it causes more to be produced. A regular supply to the markets keeps prices regular, fluctuating only according to the abundance or scantiness of the crops.

It is for the general advantage that the farmers should bring the crop to market, regularly, without waiting one赢 or fall of prices. As a general principle, a farmer should thresh his corn at a time when the work out of doors is less important, or when the weather is unfavourable for it. He must do so whenever the fodder for his cattle diminishes, and it is thought advisable to sow a crop of grain, as soon as the corn is in sufficient quantity to require a team to take it to market, it should be sold. But many circumstances may make this regular course inconvenient. There may not always be a demand for the article, and if so, a diminution in the price must be submitted to. In some situations purchasers cannot always be found, at any price, and a granary to store corn becomes indispensable. In commercial countries there are always speculators in corn, ready markets for it, and necessarily the corn must be sold at a profit. The farmer is tempted to withhold his corn when the price is low, in order to have a greater profit when it rises; and, to a certain degree, he is justified in doing so: but if he speculates on his own corn, when he can obtain a fair price for it, he is becoming an agent, and if he puts it up to sell at a profit. When there is a good market at hand, the produce of the farm should be regularly sold, so as to give the farmer a constant supply of money for his operations, besides a portion set apart for the rent and other regular payments. In this way he will sell the corn of the year, have had the average price, without risk and without speculation; and by a little caution he may obtain somewhat more than a mere average, provided he has always more money at hand than his immediate wants require, and a good market at hand.

In order that the farmer may not be imposed upon, he must either make himself acquainted with the transactions in different neighbouring markets, or he must rely on the honesty of an agent, and attend markets and sell for others. These men are generally called salesmen or factors, and when their character for honesty is established, the small sum which is paid them on the sales will generally be found to be fully compensated by the increase which the knowledge of the markets and of the quality of the articles gives them. This is particularly the case in the buying and selling of live-stock, which requires much more knowledge and experience than most other articles. The people whom the farmer has to deal with in fairs and markets have generally a thorough knowledge of the real value of the articles offered for sale, by constantly frequenting markets, and confining their attention to buying and selling only. The farmer is therefore seldom a match for the dealer, and will find it his interest to employ a person equally skilled in these matters. The farmer would lose too much valuable time, and be led to unnecessary expense, if he attempted to gain the requisite knowledge, by frequenting different and distant markets, as the dealers do.

Notwithstanding the above, certain knowledge of markets and prices is extremely necessary, in order to enable a farmer to detect imposition or ignorance in the person he employs, and the occasional attendance at fairs and markets is indispensable to obtain this knowledge.

When the whole bulk of the articles to be sold is brought into the market and exposed for sale, the market is called a pitched market; when only a small portion is brought, to show the quality of the whole, it is called a sample market. Each has its peculiar advantages and inconveniences. In a pitched market, the farmer is at liberty to carefully examine it; he may therefore be induced to offer a more liberal price; but it often happens that he has to carry a load away by the same road by which it was brought; the sacks also have to be returned, which causes more expense than is necessary, and they may be compared with the bulk in case of any dispute. The seller sends the article sold on a day agreed upon; and if it is corn the sacks are brought back when the waggon or cart returns home. The price is usually paid on the delivery of the article at the market. If the general price of the article is high, the sample is generally adopted; small quantities are usually pitched.

Great inconvenience arose formerly from the various measures used in different markets; and dealers required of farmers to deliver their corn at the exact price which had been established one uniform standard of weights and measures has removed all difficulty, and the rapid and frequent communications which now take place between the great towns and every inhabited spot in the kingdom have made prices uniform for all articles. But it is now the opinion of the experts in all parts of Great Britain, than in any other country, and the prices in the markets of the great towns differ so little, that in the country these are generally regulated by those of London, Liverpool, or Edinburgh. Every farmer who cultivates land to any extent must attend to the fluctuation of the markets, and his operations may be much influenced by the comparative prices of different kinds of grain.

MARKLAND, JEREMIAH, was born the 26th of October, 1714, near Dursley, Gloucestershire, of which his father was vicar. He was educated at Christ's College, Cambridge, and was sent to St. Peter's College, Cambridge, in 1710. He took his degree of M.A. in 1717, and was soon afterwards elected a fellow and tutor of his college. He went to London in 1727, and was removed to Punshon, in Hertfordshire, to undertake the education of Mr. Shode's son, and afterwards travelled with his pupil on the Continent. During the latter part of his life he resided at a small village near Darlington, in Surry, where he died, the 7th of July, 1774.

Markland lived in the greatest retirement, and devoted a long life to the diligent study of the Greek and Roman writers. He was one of the best English scholars and critics of the last century, but wrote very little. He edited a Syllabus of the Letters of Cicero, and the two Iphigenias of Euripides (1771), which have been republished by Gaisford. Subjoined to his edition of the 'Supplices' are his 'Explanationes veterum auctorum.' He also contributed some observations to Taylor's 'Lexicon Lyriacum,' and 'Lexicon Graecum.' He wrote on the Middle Verb in Greek, and to Mugggrave's edition of the 'Hippolytus.' In 1745 he published 'Remarks on the Epistles of Cicero to Brutus, and of Brutus to Cicero,' besides a Letter to a Friend, in which he attempts to prove that they could not have been written by Cicero, and in an Appendix to this work he also maintains that the two letters which occupy a place in Cicero's works, under the titles of 'Pro Domu sua spum Pontificem,' 'De Haruspiciis Respicientibus in Senatu,' and 'Ad Quirites post Reditum,' are not genuine. This opinion has been supported by F. A. Wolf, and many other able critics.

MARL. A mixture of calcareous and argillaceous earth is commonly called marl; in Norfolk soft chalk used on the
lands is called marl; in Worcestershire and Somersetshire red clays are termed marls. In geology we have the red marl, the black marl at the base of the lias, the chalk marl, the freshwater marls of Headon Hill in the Isle of Wight. The term is too vague for scientific descriptions.

Marl, an earthly substance found at various depths under the soil, and especially preferred for the improvement of land. It consists of calcareous and argillaceous earth, in various proportions, and as the former or the latter prevails, so it is beneficially employed on clays or sands. There are two ways of converting the marl—clay marl, shell marl, slate marl, and stone marl. The clay marl has probably been formed by the slow deposition of clay suspended in water and mixed with the particles of decomposed shells. When these shells have retained their form, or appear in fragments, it indicates the presence of marl, and a complete decomposition of the shells forms slate marl and stone marl. The effect of marl is the same as that of clay and chalk upon sandy soils; on heavy soils its effect is proportioned to the quantity of calcareous earth which it contains. The peculiar advantage of marl is its readily crumbling to powder by the effect of air and moisture. If it is too compact to dissolve under these influences, it can only be made useful by burning, and in this case it is only a substitute for lime, its value depending upon the price of the expense of burning it in the marl.

To ascertain this proportion, the marl is thoroughly dried over the fire and pulvred; a certain quantity is weighed and put into a cup; diluted nitric acid or strong vinegar is poured slowly upon it, out of a vessel containing a definite quantity of nitric acid. If the quantity of the acid equal to that which has been used is placed in a cup, and fine marble dust is gradually put into this, from a certain quantity which has been weighed, as long as any reaction takes place, the weight of the acid used for this purpose evidently gives the quantity of calcareous earth in the marl, since it takes the same quantity of acid to dissolve it.

Marl is often found very near the surface, so as to mix with the clay or sand, and it is useful in the formation of marl by the addition of the superfluos water carried off by the drains. Marl being found with blue veins through it, a marbled earth containing sulphure of iron, or vitriol, has sometimes been manufactured; but very useful is, quite the reverse; for sulphure of iron in any quantities will produce absolute sterility in a soil. The nature of marl can always be detected by pouring a little vinegar on it; if it does not effervesce, it is only clay, and probably contains iron, which is readily discovered by the red colour on burning a portion of the fire, or by mixing it with water and then adding an infusion of gallnats in the strained liquor: the black colour immediately detests that sulphure of calcareous marl. There is a greater mistake than to imagine that marl is a substitute for dung. Light land which has been marled becomes less hungry, and marl will make dung go further, but it will not act well upon a poor soil without dung; and if the land is severely cropped after marling, and not sufficiently recruited with enriching manures, it will be sooner exhausted than if it had not been marled; for marl, like lime, renders soluble the natural humus in the soil.

It is very easy to judge of the value of any marl on a given soil when the proportion of calcareous earth and clay in its composition has been determined. We have only to consider what improvement will be produced in the texture by the addition of so much lime and so much clay. The advantage of marl over pure chalk is that it is more quickly pulverised; but whenever chalk is so much inferior in cost an equal price, it is far more effectual and of longer duration on clay soil than the best marl. On sands it may be different, and the fat marls containing much unctuous clay are preferable from their binding nature.

When marl is forming composites with dung and peat earth. It is laid in layers with the dung and peat, and if the heap is well soaked with urine or the washings of stable-yards, it will in a short time become a most valuable manure for all kinds of soils. Many peat bogs are found on a marly bottom; where this is the case, and it can be drained, or the water got rid of in any way, the marl, when laid on the surface, consolidates the peat by its pressure, and soon makes it capable of producing good herbage by converting it into a rich vegetable mould.

When marl is found in the sedimentary strata, and when the distance of the marl and the depth from which it is raised are known; when it lies in a stratum under the land, it is generally the cheapest plan to open a pit in each field; for the carriage of the marl is then the cheapest. When an extensive marl is found near the surface, but at a distance from the pits, it is found by experience that the cheapest way of putting it on the land is by means of men wheeling it in barrows with the help of planks, as is done in digging canals and other similar public works.

Marlborough. [Wiltshire.] Marlborough, John Churchill, Duke of Marlborough, the ablest general and most consummate statesman of his times, was born at Ashe in Devonshire, on the 24th of December, 1650. He was the son of John Churchill, a gentleman of antient family, whose fortunes had suffered severely in the civil war, through his devotion to the royal cause; and whose loyalty, after the Restoration, was rewarded with sundry small offices under the crown for himself and additon more question of benefit of annuities, for his men in the prodigate court of Charles II. Arabella Churchill, his daughter, became first maid of honour to the Duchess of York, and next mistress to her husband the Duke, afterwards Charles II; and John Churchill, who was advanced to that dignity, doubtless owed his early advancement to this disgraceful connection. It is remarkable that one of its fruits, James FitzJames, duke of Berwick, proved a commander of renown on less illustrious materials than his father. The natural talents and merits of Churchill however were of too high an order to be solely dependent on the patronage which had suffored the beauty of his house. Notwithstanding the disadvantages of a neglected education, which seems to have been confined to a short art school, he gave early indications of spirit and intelligence; and his desire for a military life having been gratified by his patron with a commission, he invariably distinguished himself in each of his early campaigns; in the defence of Tangiers against the Moors; and in the several operations in which the English troops shared as auxiliaries to the French armies under Louis XIV. during the unprincipled alliance of Charles II with that monarch against the Dutch. On the great theatre of continental warfare, in which he had been accustomed to serve from 1672 to 1677, his brilliant courage and ability, no less than the singular graces of his person, attracted the notice of the illustrious Turenne, who pronounced, with prophetic sagacity, that 'his handsome Englishman,' would 'one day prove himself a master of the art of war.'

On the conclusion of the peace of Nimpan, Churchill, now a colonel, returned to England, and was happily rescued from too licentious a career of dissipation by an urgent attachment for the marriage of his son to the daughter of his cousin and wife, who, for good and evil, influenced the whole tenor of his subsequent life. This was Sarah Jeannings, a young lady of birth, genius, and beauty, whose incorruptible purity in a vicious age might have rendered her worthy of the xorious love of the hero, if her imperious temper...
had not disgraced his submission to its tyranny, alienated his political friends, and embittered his domestic peace. She had been placed, like himself, at an early age, in the household of the Duke and Duchess of York, where she became the favourite of their daughter, the Princess Anne, and had acquired over the spirit of the future queen that commanding influence which it belongs to the stronger to exercise over the weaker mind. Her marriage separated neither her husband nor herself from their service in the ducal household. Churchill wasgenerally employed by the Duke of York on many political occasions; and when the Princess Anne was married, his wife was, by her express desire, made a lady of her bedchamber. Churchill had previously been raised, through the influence of his brother, to the command of the army that followed the prince; and when William became king, he received at his hands the title of earl of Marlborough, and the offices of privy-councillor and lord of the bedchamber, as the reward of his ingratitude. His subsequent conduct throughout the reign of William was consistent to the principle for which he corresponded and intrigued with the exiled king. By this double treason and perjury, he for ever took from the former desertion of his declared sovereign all extenuation of a conscientious principle; he broke his allegiance to the new king whose favours he had accepted; and he branded his own inconsistency with the meanest motives of self-interest and self-preservation.

William III, who knew equally well how to estimate the capacity and the sincerity of Marlborough, alternately imposed and relaxed the holds which restrained the minister of the commonwealth whom he is said on his death-bed to have recommended to his successor as the fittest person to lead her armies and direct her councils. The favour of Marlborough's wife with Queen Anne was probably a more powerful, though less rational, support for the great politician; this was now transferred to the command of the allied forces in the war of the Spanish succession; and he immediately entered on a course of glorious achievement which since the days of Henry V. had never been equalled, and which until our own eventful time was never surpassed by any British commander or army.

When Marlborough landed at the Hague, in June, 1702, to take the command of the allied army, the French under the skilful Bouillers, by the superior force and vigour of their preparations, had been able everywhere to assume the offensive; the very frontiers of the Seven Provinces were threatened; and it was feared that the efforts of the English general must be restricted to the defence of the republican territory. Moreover, he had to encounter the successor of the ill-omened Dissels, the second commander, and the opposition of the Dutch deputies, whom the states-general sent into the field to control the movements of their troops, and whose ignorance of war and dread of responsibility were grievous impediments to every bold enterprise. Yet, notwithstanding these obstacles, which shackled all his operations and heavily taxed his forbearance, he succeeded, by a series of masterly movements, in compelling the French armies to retreat in all quarters, delivered the Dutch frontiers from their presence, and, having defeated a Spanish army under General de la loo, Ruremond, Stevenswaert, and Liege. These services, short as they fell of the results which might have been attained if the genius of the commander had been allowed its full play, were so far beyond the anticipation of the allies, that even Vanbrugh, the Prince of Orange's kinsman, and Queen Anne elevated him to the ducal title.

The following campaign of 1703 presented a repetition of the same obstacles to the enterprise of Marlborough. Arrested by the timidity of the field-deputies, and harassed by the misconduct of the Dutch generals, he was allowed to effect nothing in the Netherlands except the reduction of Bonn, Huy, Limburg, and Guelpherdt: when the elector of Bavaria with his own troops, and the Princes of Orange and Baden, broke into the defences of the Spanish dukedom of Danube, signally defeated the forces of the emperor, assured that prince for the safety of his capital, and threatened dissolution to the grand alliance itself. These dangers raised Marlborough to attempt the masterstroke of his military career; and, as his victories in the Netherlands had fixed his mind on the safety of the Netherlands, he secretly conceived and executed upon his own responsibility the bold design of marching into Germany at the head of the English troops. He formed a junction on the Danube with the Imperial forces, and prevailed upon the Emperor to make a coalition, and finally, in concert with the Imperial commander Prince Eugene of Savoy, a kindred spirit, attacked the enemy on the 13th of August, 1704, at and near the village of Herbsheim, with such spirit and impetuosity as to defeat the whole of the French. In a memorable battle, the French and Bavarians, who were commanded by the elector in person and Marshal Tallard and Marsin, lost above 30,000 men killed, wounded, and prisoners, Marshal Tallard himself being among the latter.

But the moral and political effects of the victory were yet greater: it dimmed the lustre which the successes of Louis XIV. had shed upon the French arms, and destroyed the charm of their invincibility; it delivered the empire: and at once the invincibility of the Holy Roman emperors was destroyed. Marlborough was rewarded with the confidence of himself and his heirs of the crown lands at Woodstock, on which it was also resolved to erect for him a palace at the royal cost. This noble design to perpetuate the memory of Marlborough's services was ultimately realised by the purchase of the architect Vanbrugh, in the majestic though cumbersome pile which still bears the title of the castle of Blenheim; but the public enthusiasm which had dictated so splendid a monument was stifled in faction, and the completion of the work was indicted for want of his high-spirited wife, in the person of the lord deputy of Ireland, through the interference of the nation. The gratitude of the Imperial house for the preservation of its capital and dominions was never less loud nor more durable. The territory of Mindelheim was restored to the Elector of Bavaria, who was con-ferred upon the victor of Blenheim; but though the premature death of his only son left him without heirs male, the dignity was not allowed to descend in the female line; and when the lands of Mindelheim were included in the duchy of Bavaria, the Elector of Hanover was therefore willing to sell them, having had the meanness to withhold any compensation from their deliverer.

The march into Germany had liberated Marlborough from the paralyzing control of the Dutch field-deputies, and the intrigues of the ministers of the commonwealth in the Netherlands subjected him again to the same impediments and annoyances; and in the campaigns of 1704, though he skilfully forced the French lines between Naum and Antwerp, he was once more restrained from striking any decisive blow upon the enemy. But in the following year (1706), happily for his wishes, the great efforts of the French in the Low Countries under Villeroi enabled him to tempt them to an encounter; and in the great battle of Ramillies he gained a second victory, so complete that the army of the Prince of Orange, consisting of 13,000 men, from their cannon, were compelled to evacuate the whole of Spanish Flanders. Brussels, Ghent, Antwerp, and Oudenarde opened their gates to the conqueror, and the strong fortresses of Ostend, Munin, Dendermonde, and Ath were reduced by regular sanguine.

Through the apathy of the Dutch these successes were followed, in 1707, by a year of inaction; but in the summer of 1708 an attempt of the enemy to recover possession of Spanish Flanders brought on a general engagement at Malplaquet, which terminated in the utter rout of the French under the dukes of Burgundy and Vendôme, with a loss of 14,000 men. The forcing of the passage of the Scheldt and reduction of the great fortress of La Hogue, a piece of first-rate strength, and defended by a garrison of 1,200 under Van de Capellen, were decisive victories.

The following year (1709) was distinguished by the sanguinary combat of Malplaquet, the most doubtful of Marlborough's exploits; since, though he was undoubtedly victorious, the assault of an immense army under Villeroi as a
position of tremendous strength, has exposed him and his colleague Eugene to the charge of reckless temerity; and the result produced no advantages equivalent to the frightful carnage by which it was purchased. The next campaign (of 1710) opened with a general advance, which the enemy's lines by Marlborough, which was followed by the reduction of Douay, Bethune, and other posts. Villars employed the autumn and winter in constructing a series of strong lines on the Flemish frontiers, to cover the interior of France; and through her ceded to him all her allies; and so confident was he in the impregnable character of these works, that he openly boasted of having "at last brought Marlborough to his ne plus ultra." The futility of this vaunt was disgracefully exposed, and never did the royal city of Paris appear more splendid than this, which was destined to be his final campaign; even while his mind was distracted, and his energies were crippled by the malignant intrigues of his political enemies in England. On the 8th of August, 1711, by a sudden and unexpected massacre, he burst through the lines of his able though gasconading antagonist near Bouchain, formed the siege of that strong fortress, and effected its capture—his last achievement—under the eyes of the superior French army and populace, Annette Bouchain, Mrs. Freeman.

The political intrigues which disgraced the court of Queen Anne, and closed the triumphs of Marlborough, belong rather to general history than to the biography of the illustrious leader who was their victim. But they were foemen in his time, and to those who followed his line of conduct, his rise was, also, the real instrument of his fall. So romantic was the friendship which the queen had cherished for her, that utterly impatient of the etiquette and restraints of a court, and under the assumed name of Mr. Johnson, which he adopted in the country, she corresponded, in all the freedom and affectionate intimacy of an equal, with the duchess as 'her dear Mrs. Freeman.' If the duchess had been contented to use her influence with moderation, the easy nature of the queen might have been turned, so that the duke and duchess did not rest till they had removed the duchess to the Wing as the queen to the opposite party. As long as the house ofHanover was weak, the queen's wishes were generally gratified; and the young prince and his government, united the two ladies in a band of political sympathy more powerful than their own opinions. But when his death relieved them from the object of their common dislike and apprehensions, Anne grew more regard to her Tory predilections; the duchess ardently advocated the rival cause; and so arrogant and intemperately were her tyrannical injunctions enforced, that they ceased not until the weak queen had been compelled to surrender her throne, and in which state of ungratified attachment to Tory principles, the duchess was a violent politician, and notwithstanding her husband's Tory connections and prepossessions, she had become as warmly devoted to the Whig as the queen to the opposite party. As long as the same spirit governed the conduct of Marlborough, the duchess ardently advocated the rival cause; and so arrogant and intemperately were her tyrannical injunctions enforced, that they ceased not until the young prince and his government, united the two ladies in a band of political sympathy more powerful than their own opinions. But when his death relieved them from the object of their common dislike and apprehensions, Anne grew more regard to her Tory predilections; the duchess ardently advocated the rival cause; and so arrogant and intemperately were her tyrannical injunctions enforced, that they ceased not until the weak queen had been compelled to surrender her throne, and in which state of ungratified attachment to Tory principles, the duchess was a violent politician, and notwithstanding her husband's Tory connections and prepossessions, she had become as warmly devoted to the Whig as the queen to the opposite party. As long as the same spirit governed the conduct of Marlborough, the duchess ardently advocated the rival cause; and so arrogant and intemperately were her tyrannical injunctions enforced, that they ceased not until the young prince and his government, united the two ladies in a band of political sympathy more powerful than their own opinions. But when his death relieved them from the object of their common dislike and apprehensions, Anne grew more regard to her Tory predilections; the duchess ardently advocated the rival cause; and so arrogant and intemperately were her tyrannical injunctions enforced, that they ceased not until the weak queen had been compelled to surrender her throne, and in which state of ungratified attachment to Tory principles, the duchess was a violent politician, and notwithstanding her husband's Tory connections and prepossessions, she had become as warmly devoted to the Whig as the queen to the opposite party. As long as the same spirit governed the conduct of Marlborough, the duchess ardently advocated the rival cause; and so arrogant and intemperately were her tyrannical injunctions enforced, that they ceased not until the weak queen had been compelled to surrender her throne, and in which state of ungratified attachment to Tory principles, the duchess was a violent politician, and notwithstanding her husband's Tory connections and prepossessions, she had become as warmly devoted to the Whig as the queen to the opposite party. As long as the same spirit governed the conduct of Marlborough, the duchess ardently advocated the rival cause; and so arrogant and intemperately were her tyrannical injunctions enforced, that they ceased not until the weak queen had been compelled to surrender her throne, and in which state of ungratified attachment to Tory principles, the duchess was a violent politician, and notwithstanding her husband's Tory connections and prepos...
Hessians, Dones, Wirtzemburgers, and Prussians and moreover the plans were almost every enterprise marked by the timidity or obstinacy of the Dutch deputies, the moral triumphs of victory with such heterogeneous materials, and under such heavy disadvantages and discouragements, must very much raise our estimate of the character which they were.

As a man, it is less easy to form a true judgment of the character of Marlborough than as a statesman or a general. If we were to estimate his moral worth by his double treachery to James II. and to William III., by his tame submission to Louis XIV., and by his conduct of war which degraded his private habits, he might justly be numbered among the greatest and meanest of mankind. Nor is there any weight in the extenuation which has been attempted for his political falsehood, that he was not worse than his contemporaries; since it is the test of true greatness to rise above, not to sink to, the level of a common corruption. Yet with all his faults, it would be easy to prove that there were not wanting in Marlborough many of the qualities of a good patriot and a good man. His friend the lord treasurer Godolphin and himself appear, of all their contemporaries, to have been most free from the virulent spirit of faction and most sincerely devoted to the true honour and interests of their country. The attachment of Marlborough to the king and prince of the Catholic Church, England was sincere and pure; he was unaffectedly a person of strong religious feeling and practice; and in these respects the example which, as a commander, he held out to his troops, and enforced in his camp, of a piety without fanaticism, is a lesson as it has been found too timid too courageous too, which the inconceivable baseness of faction affected to doubt, and which in his youth had been fiery and impetuous, displayed in his later years the calm and collected spirit of the Christian hero. In public action he was both brave and merciful: his foes feared him, and he was but too fond a husband, too confiding a friend, and too indulgent a master.


MARLOWE, GREAT, a market-town, parliamentary borough, and parish, in the county of Bucks and hundred of Dacorum, 6 miles N. by E. of the town of Aylesbury, and the Thames, is pleasant and picturesque. Its direct distance from Buckingham is 30 miles south by east, and from London about 29 miles west by north. There are two preachers, namely, a parish clergyman of 22 years, and three smaller ones. The parish church, dedicated to St. Mary, is a handsome modern structure, which was consecrated in 1835, and is surmounted by a spire. A suspension bridge was erected over the Thames in 1835; its span from pier to pier is 75 yards. The dwelling in which Shakespeare lived in the town is inhabited by the Duke of Lichfield and patronage of the dean and chapter of Gloucester produces a net income of 724. In the year 1626 Sir William Borsie founded a school here for the education of poor boys. The number of scholars in 1833 was twenty-four, and the subjects then taught were reading, writing, and arithmetic. The income of the charity at the breach date was 116l. 12s. 10d., out of which the schoolmaster received a salary of 50l. A portion of the remaining revenue has been appropriated since 1822 to the payment of a schoolmistress, who teaches twelve poor girls to read, make lace, and do plain work. Besides the above there is a national school, supported by voluntary donations, for educating children of both sexes; there are also the Church Lane almshouses, and several other benevolent foundations of minor importance. (See the Further Return of the Commissioners on Charities, pp. 132-145.) The borough has returned two members for the reign of Edward I. Its population in 1831 was 427.


MARLOWE, CHRISTOPHER, a dramatic writer of some eminence, was born, according to Malone, in 1567; but the exact date is unknown. All that is known of his life may be given in a very few lines. He was educated at a national school, supported by voluntary donations for educating children of both sexes; there are also the Church Lane almshouses, and several other benevolent foundations of minor importance. (See the Further Return of the Commissioners on Charities, pp. 132-145.) The borough has returned two members for the reign of Edward I. Its population in 1831 was 427.


The following plays are attributed to him:—'Dr Faustus,' 'Edward the Second,' 'The Jew of Malta,' 'Tamur- laine the Great,' 'Lust's Dominion,' 'The Massacre at Paris.' The Doomsday Book of 1236 shows that Marlowe was possessed of a two-acre tenement in the parish of Deptford, from Anthony Wood, and others.

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Both the matter and the style of 'Tamurlaine' are asserted to differ materially from Marlowe's other compositions, and there is reason to believe that 'Lust's Dominion' is the work of another hand. There remain, then, 'The Massacre of Paris,' 'The Jew of Malta,' 'Edward the Second,' and 'Faustus.' Of the first little need be said; for the text, as it now stands, is an inadequate copy of the work done by Collier, who has very aptly shown by a comparison of the received version with a leaf of a contemporary MS.

'The Jew of Malta' is one of those extraordinary impossibilities which imply in the chief character a villain more than human; such, in fact, as were reserved only to the nation to whom Barabas belongs. There is a general resemblance between Barabas, the 'Jew's docther,' in old ballad, and Shylock; but they are like, not as images of each other, but as representations of one class, imperceptibly superseded in time up to the present day. While the one is a mere product of malignity and aversion, the other is cruelly beyond all comparison.

'Faustus,' which succeeded 'The Jew of Malta,' as a play to which greater interest is attached at present than fifty years ago, owing to the celebrity of Goethe's 'Faust.'

Those who attribute the 'Faust,' as well as the 'Jew of Malta,' to Marlowe, are doubtless right. The chief character of Faust is the greatest conception of human invention—who believes that a deep meaning lies hid behind all the apparent absurdities, and that the moral influence of the work is of a high and impressive kind—will of course laugh at any attempt at comparing the German with his English prelorm. At the same time they must allow that Marlowe's play is one of the first, if not the very first attempt at portraying the struggles of a man whose faith is wavering, the first attempt in drama to bring in the spirit which has been on the ascendant for the last forty years. Moreover the moral horror of Faust's death far surpasses the stage-effects which tell so strongly in the last scene of the first part of the German poem; and it would not be possible to say that Goethe has borrowed not a little from his English rival.

Perhaps, on the whole, we must assign the first place among Marlowe's works to 'Edward the Second.' It is the prelude to the Shaksperian 'History,' and contains many passages which are taken by Shakespeare's 'Macbeth.' Those who wish to pursue the subject at greater length may consult an interesting article in the 'Quarterly Review,' which adds much to our information on the subject of the English drama.

Being the carelessnes of the printers, many lines have been confused in Marlowe's plays, to the great injury of various passages, which now appear to be prose, though they are in reality verse.

Marlowe has been compared to Bucelius: there is some-
thing specious in the comparison, but it can only be very
good for one, and for that the free style form of
the English drama cleared of rhymes; and he may be
considered as the link between Shakspere and the Mor-
alities. 'Faustus' is nearly a 'morality;' 'Edward the Se-
cond' is a regularly formed 'history.'
to the 17th century, the French translated Ovid's 'Art of Love'
and some other classical works.
(Collier's History of Dramatic Poetry; Preface to Mor-
lowe's Works, ed. 1826; and Quarterly Review.)
MARLSTONE. Sandy, calcareous, and iron strata,
which divide the upper flint of Polesden Lacey, are thus
 designated. (Geology.) This mass of rocks is nowhere
so well developed as in Yorkshire and Leicestershire.
MARLY. [Seine et Oise.
MARMALADE, a sort of preserve, made with sugar
and Sierra to bitter orange, a variety of the fruit of
the Citrus Bigaradia. It is more wholesome when properly
made, i.e. when the rind is soft, than most other sweet
preserves, as the bitter communicates tonic and stomachic
properties to it.
MARMANDE. [Lot et Garonne.
MARMONTEL, JEAN FRANCOIS, was born at Bort
in Limousin, in 1723. His parents were of very humble con-
dition, and he owed his instruction in the Latin tongue to
the gratuitous tuition which he received in a college under
the monks of Saint Aubin. At the age of 14 he was a
tradesman at Clermont, but a love for literature interfered
with all commercial pursuits. At an early age he became
professor of philosophy at a seminary of the Bernardins at
Toulouse, and supported his mother and family from the idea
of taking orders. About this time he met Voltaire, to
whom he had sent some poems, and who encouraged his
attempts, brought him to Paris in 1745. Voltaire intro-
duced him to several persons of distinction, and the success
which he met with in finishing its reddened a
tastic poet. Owing to the patronage of Madame Pompada-
dour he was made historiographer of the royal buildings
(Historiographie des Bâtiments du Roi), with a pension of
1500 livres, and he also obtained the right of publishing
whatever he wrote, and indeed the license of falsely
suspected of satirising a person of distinction, and in
consequence lost the 'Mercury,' and was confined in the
Baule. His celebrated Contes Moraux—which, however
dubious as to their moral character, are exquisite specimens
of the lighter kind of French writing—followed his release,
and gained him great reputation. On the death of Duclos
he became Historiographer of France; and in 1783 he was
made secretary to the Académie in the place of D'Alem-
bert. He lost his appointments and his property on the
Revolution, and was obliged to retire to Abbeville, where he
died in obscurity in 1799, and was buried in his own garden by
Catholic priests.
The works by which Marmontel is chiefly known are his
Contes Moraux, his romances 'Belisaire' and 'Les Incas,'
and his 'Mémoires.' The 'Contes Moraux' and 'Belisaire'
are so familiar in an English shape, that they are almost
British classics.
M'ARMORA, or MARMARA, SEA OF, or the Propon-
tis of Eudocius, a strait situated between the Grecian Archi-
Pene and the Black Sea, communicating with the former by the
Dardanelles, the antient Hellespont, and with the latter by
the Strait of Constantinople, the antient Bosporus. Towards
the east it terminates in the long and narrow gulf of Ismmed,
and towards the west it is terminated by the gulfs of Cernica
and by the Euxine, the Gulf of Nicomedia (after
the Gulf of Nicomedia) and the Canusius of the
antients.
The early Greek geographers, more especially those before
the time of Ptolemy, appear to have been very much mistaken
respecting the general position of this sea. They represent
its greatest length in a direction nearly north and south,
instead of east and west, placing the Thracian Bosporus and
the Hellespont on the same meridian. Eratosthenes and Ptole-
maeus used the data for deter-
m
ing its great inclination from the west towards the east,
having described the parallel of Amnias as passing through
the Propontis and the Hellespont; and the reason assigned
for his making no use of this knowledge is his unwillingness
to depart from the prevailing opinion of the age in which
he lived. Polybius also seems to have been aware of the
inclination of the Propontis.
Herodotus gives the length of the Propontis as 1400 sta-
dia, and its breadth at 500 (iv, 85): he allows 400 stadia
as the length of the Hellespont (Dardanelles). Strabo (p. 123
[Caesalb.) gives the distance as the length of the
Propontis from Byzantium to the Troad, and reckons
its breadth nearly the same. He also adopts the opinion
of Pythias as to its direction, placing the Hellespont and the
Bosporus under the same meridian, and it is not until the
second century B.C. that Pliny the Younger determined on
assumming an inclination from west to east, and even then
the error in its position received but a slight correction.
Turning to our modern maps, the Sea of Marmora is
comprehended between the parallels of 40° 18' and 41° 5'
N. lat., and the meridians of 26° 40' and 30° 5' E. long.
Its extreme length, from west to east, including the gulf
of Ismid, is about 160 geographic miles; from strait to strait,
in a west-south-west and east-north-east direction, 110 miles;
and its greatest breadth is 43 miles.
On its shores are described as modern travellers as highly
cultivated and picturesque, with a greater boldness of cha-
acter on the Asiatic than on the European side.
The depth of this sea is in many parts very considerable.
In the Admiralty Chart published in 1835 we find 133
fathoms recorded by the composite explorers for
about the same distance due north of it no bottom at 352
fathoms; from which we may infer that the depth is very
much greater midway between the two shores.
Since there are no regular tides in the eastern basin of
the Mediterranean, and particularly the Black Sea, they are much
less to be expected in the Sea of Marmora. We accord-
ingly find that there is no periodical ebb and flow of
their waters; but a current sets through it from the Bosporus,
running to the Hellespont, and returning through the
prevailing winds, and continuing its course through the Dar-
danelles to the Archipelago. Its navigation is by no means
difficult: it is generally free from dangers, and good anchorage
may be found all along its northern shore, under its various
islands and capes.
The most remarkable islands in this sea are, Marmora
(from which the sea takes its name), Rabi, and Liman
Pasha, occupying its western division; Papa, or Kalumino,
off the gulf of Modaneih; and the group called the Princes
Islands, near the Asiatic shore, about ten miles south
east of Constantinople. The Princes Islands are nine in num-
ber, two of which, Osea and Rata, are uninhabited.
Of the others, Prinkips (the antient Pitysus) and Kalki
(the antient Chaleia) were once distinguished for their copper
mines, as being very beautiful, and the Frank merchants of Pera and others have their
summer residences on them.
The remarkable peninsula of Artaki, which gives its name to the peninsula, and which is
thought to occupy the site of the antient Artace, is not a
town of much note. It is said to contain about 4000
inhabitants, and has some trade in wine, oil, and silk.
In addition to Constantinople, at the entrance of the
Bosporus, and Gallipoli, at the entrance of the Dardanelles, the
principal towns of the Sea of Marmora are, Rodosto,
Eraklik, and Sinope. They are situated on the
Bougia, Panorma, and Modaneih, on the southern shore.
There is also Ismid, at the head of the gulf of that
name, and Gemelieh, at the head of the gulf of
Modaneih. The chief rivers which enter this sea are the Tchori and the
Otrus, in Europe, and the Lycus, the
Bokli, or Safdarle (the antient Æsopus), and the Mu-
lish (the antient Rhynacidas), in Asia. There are two other
rivers on the European side which appear to be of some
importance; they are called Karmaz and Maslidere in the
large map of European Turkey. Vienna, 1829.
MARMORA, or MARMARA (the antient Pronconne-
sus), is an island in the sea above described. It was early
celebrated for its marble quarries, from which Cypucus and
other neighboring cities were supplied with marble
for their edifices. (Strabo, p. 588.) More recently Consti-
tiopole has been indebted to these quarries for the embel-
ishment of its mosques, fountains, and other public build-
ings; but the marble is now principally used for the
sepulchral monuments of the Turks and Armenians.
is said to have abounded with deer, from which circumstance its Greek name, Pannonia, and its earlier appellations Elagabala, are said to be derived.

It has a mountainous range of moderate height, that is, a sterile aspect, and is poorly inhabited. The chief town, which is also called Marmora, is situated on its south-west side, and is the capital. It is surrounded by several villages, and its inhabitants are chiefly Greek Christians.

MARMORA, a town of Asiat, Turkey, in the province of Anatolia, in 28° 43' N. lat. and 29° 5' E. long.

MARMOT. [Murmurs.] Marne is a river from France belonging to the system of the Seine, which it joins just above Paris. [Seine.]

MARNE, a department of France, bounded on the north by the department of Ardennes, on the east by that of Meuse, on the south-east by that of Haute Marne, on the south by that of Aube, on the extreme west by that of Meuse, and on the west and north-west by that of Aisne. Its form is irregular. The greatest length is from north-west to south-east, from the neighbourhood of Fismes on the Vesle to the neighbourhood of St. Dizier (Haute Marne, and finishes, at right angles to the length, is from the village of Petit St. Hilaire on the Sûpeipe to the bank of the Seine, near the junction of the Aube, 62 miles; the area is estimated at 3,105 square miles, an area exceeding that of any English county except Lincoln, which also has about 1,000 square miles that of the two counties of Essex and Suffolk.

The population, in 1831, was 337,076; in 1836, 345,243, showing an increase in five years of 8,164, or about 2.5 per cent, and giving 109 inhabitants to a square mile. In the year 1835, it is very probable that the two English counties with which we have compared it, though not very much indeed surpassing the single county of Essex, the more populous of the two. In density of population it is far below the average of France, and below every English county except Lincoln, where 183,519 of the inhabitants of Marne, the capital, is in 48° 57' N. lat. and 4° 21' E. long., 69 miles in a direct line east of Paris, or 102 miles by the road through Meaux, Château-Thierry, and Epernay.

The banks of extensive plains, or of undulating or hilly tracts, in which the greatest elevations do not exceed 1,200 feet above the level of the sea. The general inclination of the surface is toward the west and north-west, in which directions the waters flow. The western side of the department is occupied by the superelevations formations of the Paris basin, and the rest of the department by the chalky plain, itself, except just along the eastern border, where the formations that underlie the chalk crop out. The mineral treasures consist in quarries of freestone for building, from which the New Mills, especially in France, are formed, and in sheets of millstones, and potters' earth. Peat is dug in considerable quantity, especially in the valley of the Vesle; about 1000 tons of potters' earth are sent yearly to Paris, or into the department of Aube, and 900 tons of that of Aube is sent from the east and south of France and even into Germany. About 1000 tons of rough chalk and 1500 tons of refined chalk are sent yearly to Paris, or into Lorraine, Aisne, and Germany. Near Vitry a bed of freestone, the thickness of which reaches more than 100 feet, is worked, and potters' earth. The rivers of Marne, called the 'Cauve Sauvage,' and the main stream of the river itself, just touch the southern border of the department, which they separate for seven or eight miles from the department of Aube. The Aube has a small part of its course in this department, but of which it forms the Seine, the Auges joins the Aube. The Aube enters this department in the south-east, from the department of Haute Marne, and flows through it in a circuit, and divides the district of which branches gradually from north-west to west. It receives on its course the Ognin (or which fall the Saulx and the Clécé), and several other smaller streams. The Morin, the Petit Morin, and the Melon or Sumerlin rise in this department, but join the Seine on the boundary. The rivers in the north and north-east are the Aisne, a principal feeder of the Ognin, and the Soupe and the Vesle, feeders of the Aube. The main navigation of the department is thus stated in the government returns:—Seine, 3 miles; Aube, 9 miles; Marne, 102 miles; total, 114. None of the other rivers are noted and there are no canals.

The number of government roads is eight: they had in 1837 an aggregate length of 289 miles, viz. 284 miles in repair, 99 out of repair, and 27 unfinished. The principal road is that from Paris, by Dormans and Epernay, through Reims, to the border of Switzerland, where it is joined by the roads from Paris to Châlons branches off from the great road at La Ferté-sous-Jouarre (Seine et Marne), and passes through the Marne, and a road from Paris to Vitry passes through Conflans (Seine et Marne) and Sezanne. Roads from Châlons and to Reims and Maubeuge, and a road from from Paris to Châlons branches off from the great road at La Ferté-sous-Jouarre (Seine et Marne), and passes through the Marne, and a road from Paris to Vitry passes through Conflans (Seine et Marne) and Sezanne. Roads from Châlons and to Reims and Maubeuge, and a road from Reims leads by Epernay and Sezanne to Nogent-sur-Seine (Aube). The departmental roads were fifteen in number (Jan. 1837), and had an aggregate length of 289 miles, viz. 113 in repair, 56 out of repair, and 126 unfinished. The by-paths and paths amounted to about five thousand.

The soil of the department varies greatly; nearly two-thirds consist of chalky plains covered with a thin layer of vegetable, often sandy, soil, producing good crops of grain, hay, and potatoes. They are intersected in some places by sand hills, and other trees of similar kind, which have lately been planted to a great extent. In the southern parts of the department these chalky plains are so extensive as to have incurred in former times the reproachful epithet of 'Champ Argile.' In the north they are covered by thick woods, either composed of beech, oak, or trees of similar kind, which are well cultivated, and the oaks in the latter are extensive. About 250 tons weight of rape, linseed, or other vegetable oils are sent yearly from Châlons to Paris, Lyon, and Strasbourg. Champagne wine is however the staple produc of this department, it is distilled from the wines (Aube, wine of the river), and vin de montagne (wine of the hills), the first growing on or near the banks of the Marne, and being chiefly white—the second at a distance from that river, and being chiefly red. The vineyards occupy an extent of 42,000 to 50,000 acres; the wines are sparkling or creaming, and still. The prophecies of sparkling or creaming wine has much increased in late years. The best growths of the vin de rivière are those in the right bank of the Marne in the neighbourhood of Epernay. None of the former have given, but the grower of wines, Villiers have the highest reputation. The best vin de montagne are the white wines of Sillery, and the red wines of Ambonay, Vergy, Verzény, and other places in the commune of Châlons, which occupy about three-fourths of the sparkling and creaming wines of this department. The vineyards are found in Switzerland, Germany, Poland, Russia, and England. The red wines are sent to Paris, and into the departments of Somme, Aisne, Ardennes, and Nord. The wooden vessels are extensive: the château de the oak, the buck, and the various species of pine and fir. Charcoal is made near Saint-Ménehould, and sent to Paris.

The meadow and pasture lands occupy 95,000 to 100,000 acres. A great number of horses are bred, but the principal breed is the English breed, which is the range of France. There are numerous flocks of sheep of various breeds, English and native; and the Tibet goat has been produced of late years. The quantity of wool grown is in the average of the departments of France. Bees are numerous; and the streams and ponds of the department abound with fish.

The department is divided into five arrondissements as follows:—

<table>
<thead>
<tr>
<th>Name</th>
<th>Situation</th>
<th>Sq. Mls.</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Châlons</td>
<td>Central</td>
<td>827</td>
<td>48,097</td>
</tr>
<tr>
<td>Epernay</td>
<td>S. W.</td>
<td>665</td>
<td>50,067</td>
</tr>
<tr>
<td>Reims</td>
<td>N. W.</td>
<td>650</td>
<td>52,213</td>
</tr>
<tr>
<td>Ste. Ménehould</td>
<td>E. N.</td>
<td>425</td>
<td>33,122</td>
</tr>
<tr>
<td>Vitry</td>
<td>S. E.</td>
<td>600</td>
<td>51,572</td>
</tr>
</tbody>
</table>

There are thirty-two cantons or districts, each under a justice of the peace.
In the arrondissement of Châlons are Châlons-sur-Marne (pop. in 1831, 13,413; in 1836, 12,922), [Chalons], on the Marne, and Suippe or Suippe (pop. 2234), on the Suippe. The long village of Courtisols, or Courtissois, on the road from Châlons to Ste. Ménouhoul, consists in fact of three villages, forming two parallel streets of houses, in all about 100 or 150 houses. They have about 2000 inhabitants, distinguished from the surrounding population by their peculiar dialect, customs, and agricultural skill, circumstances which have been the subject of much anti-

In the arrondissement of Epernay are Epernay (pop. in 1831, 5318; in 1856, 5457), [Epernay]; Damerom and Dormans, on the Marne; Orbais, on the Sumerin; Montmagny, near the Suippe, on the river Corbigny, near the Morin; Anglure, on the Aube; Fère-Champenoise (pop. 2049), on a branch of the Auges; Bar-

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to the length, from the neighbourhood of La Ferée-sur-Aube to that of Bourmont, on the Meuse, 48 miles. Its area is estimated at 2420 square miles, which is rather less than that of the English county of Devon, or rather more than the conjoint area of the two counties of Wilts and Dorset. The population in 1836 was 255,969, allowing an increase in five years of 6042, or about 2.5 per cent, and giving about 106 inhabitants to a square mile. In amount of population and in density of population it is to the average of the French departments in the department of the Aube follows 249,827: that of the Neufchâtel department, for instance, below the English counties with which we have compared it.

Chauvonn, the capital, is in 48° 7' N. lat. and 5° 3' E. long., 135 miles in a direct line east-south-east of Paris, or 148 miles by the road through Provins, Troyes, and Bar-sur-Aube.

The department is hilly, and even mountainous in the southern and eastern parts. The heights of Langres and the Faucilles mountains, which constitute a continuous range, and form part of the chain that unites the Côte d'Or (Meurthe) with that of Bourbonnais (Bourbonnais), present very fine faces of sandstone. Among the hills of this department, and in the Neufchâtel region, there are many fine chalk and marl plateaux, with alpine forests. There are also many cultivated gorges, and the cherry-trees are numerous. The cultivation of the vine is an object of considerable attention; the vineyards cover 32,000 or 33,000 acres, and are remarkably productive. The wines of Aube and Montaigu are the best; the Aube slopes of the heights of Langres, are red wines of the first class; those of Vaux, Rivière-les-Fosses, and Praizy are among the best of the second class. The grass lands constitute about one-tenth of the department; more than half of them are meadows, the rest are heaths or commons, or parts of them are under afforestation, which is very great. They are of small size and middling quality. The number of horned cattle is about equal to that in the average of the departments; but relatively to the population it is above the average. Cows predominate and are considered excellent milk producers. The sheep are much esteemed for their flesh, but the quantity of wool grown is not considerable. Goats are numerous; but pigs not so. Bees are very generally kept, and in some places a great number of turkeys are reared. The rivers and pools yield fish and crayfish; small game is very abundant. The mountains give excellent subjects for excursions, and in the south of the department the wild boar, the wolf, the roe-buck, and the stag.

The woodlands are extensive, and their produce forms an important article of export. The chief timber is oak and beech. It was estimated twelve years ago that above 30,000 tons of firewood, and 15,000 tons of timber, both of oak, were yearly sent down the Marne to Paris; 10,000 tons of ship timber and 1,200,000 deals, of the weight of 12,000, with 2500 tons of fir poles with the bark on, were annually sent down the Marne from St. Dizier, chiefly to Paris.

There are numerous places of antiquity, and the department has probably increased since that period, with the growth of the population of Paris.

The department is divided into three arrondissements, as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Situation</th>
<th>Area in sq. miles</th>
<th>Population in 1831</th>
<th>Communes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chaumont</td>
<td>Central</td>
<td>797</td>
<td>73,730,115</td>
<td></td>
</tr>
<tr>
<td>Langres</td>
<td>S.E.</td>
<td>1359</td>
<td>96,492,160</td>
<td></td>
</tr>
<tr>
<td>Vassy</td>
<td>N.W.</td>
<td>615</td>
<td>66,440,147</td>
<td></td>
</tr>
</tbody>
</table>

There are twenty-eight cantons or districts, each under a justice of the peace.
MAR

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MAR

commune [Langres], near the source of the Marne; Fay-le-Bilhot (pop. 2321 town, 2411 whole commune), near the source of the Saulon; and Bourbonne-lès-Bains [Bourbonne-lès-Bains] on a feeder of the Saône. Fay-le-Bilhot has bleaching-grounds; the inhabitants carry on trade in hides and pelts to design in.

In the arrondissement of Vassy are Vassy (pop. in 1831, 2333 town, 2583 whole commune; in 1836, 2654 commune); Douloureux and Eclaron on the Blaise; Sonneville and Montereur on the Voire; and St Urbain, Joinville (pop. 3019 town, 2466 whole commune). Bourbonne-lès-Bains (pop. 5957 town, 6197 whole commune), on or near the Marne. Vassy, or Vassay, is known in history for the collision which took place between the retinue of the duke of Guise and a huguenot congregation, which led to the massacre of many of the inhabitants of the same town on October 30, 1627. The first of the wars of the sixteenth century in France. The manufactures of the town are yarn, dress goods, woolen cloths, nails, and leather. The neighborhood abounds with iron-works. Sonneville, or Sonneville, has a small woolen manufactury. Joinville, or Sonneville, has a small woolen manufactury. Jurbidac has a small paper manufactory, in which were born the Sieur de Joinville, companion and historian of St. Louis in his crusade, and the cardinal of Lorraine, brother of the duke of Guise. Woollen and cotton yarn, and worsted stockings, are made here, and the northern, or western half of the Marne commences. The timber and iron of the department, and the iron of the adjacent department of the Meuse, are deposited in stores here, previous to their being put in boats for Paris, or forwarded by land carriage, one part to Paris, the other to the interior of the country. The manufactured goods here: a hundred boats, each of 100 tons burden on the average, are yearly built. Nails and tongs for wheels are also manufactured. The town is pleasantly situated, well built, and surrounded with public walks. There is a handsome hotel, or chateau, near this town in 1814, between the French and the allies.

The manufactures of the department are considerable, though checked by the insufficiency of the means of transport. That of iron is the chief. There were in 1834, 71 iron founders here, iron-making pig-iron and 124 forges for wrought-iron. Charcoal was the universal fuel. A considerable quantity of fine cutlery is made at Langres, Chaumont, Bourbourg, and Noger-le-Bois; nails, files of every description, iron pipe, and other hardware; it has also a candle manufactory. There are considerable branches, and some woolen cloths are also manufactured. The exports are manufactured goods as above, wax, corn, wine, and timber. This was the residence of the bishop of Langres, the bishop of which is a suffragan of the archbishop of Lyon et Vienne: it is in the jurisdiction of the court Royale and the circuit of the Académie Universitaire of Dijon; and in the eighteenth military division, the head-quarters of which are at Langres. It returns four members to the Chamber of Deputies.

In respect of education this department is one of the most advanced. It is exceeded only by the three departments of Meuse, Doubs, and Jura. Over one hundred and twenty persons enrolled in the military census of 1825-26. Seventy-two were able to read and write; while on the average of the whole of France the number was sixty-six and one-half.

This department originally constituted part of the territories of the Lucenses, a Celtic people; and of the Catavencus of Hanno. The Lixovens, or the Luxovens of Gaul, the Lingones were included in the province of Lugdunensis Principii; the Leuci in that of Belicae Prima; and the Catalunii in that of Belgicae Secunda. The limits of the present department included the towns of Andermun, now Langres; and of Agues Borvonis, now Bourbonne-lès-Bains, also in the territory of the Lingones. On the downfall of the Roman empire this district came into the hands of the Franks and Lombards. From Frankish to inoffensive, the count, afterwards duchy, of Langres in Champagne, united to the crown a.d. 1179. Another part formed a detached portion of Le Barrois.

MARES IRISES. The French geologists intend by this term to designate the upper-party-coloured marls or clay of the new red formation. In Germany these are the Keuper marls, and in England the gyposaceous and siltaceous marls of Cheshire, Worcestershire, Nottinghamshire, etc. (See Sedgwick on: Magnesian Limestone, in Geo. Trans.; Murchison's Silurian System, etc.)

P. C. No. 903

MAROCO, called by the natives Moghib-el-æsa ('the farthest west'), or briefly Moghib, whence the inhabitants are called Moghibins, is an empire in Northern Africa, which extends from south to north between 27° and 36° N. lat., the most northern districts forming the southern coast of the Straits of the Great Mouse, and the Lesser Atlas, though 1° 26' and 1° 30' W. long. On the north it borders on the Mediterranean, on the north-west and west on the Atlantic Ocean, on the south on the Sahara, and on the east on Algeria. Its surface is estimated by Graves on 274,000 square miles, or by C. and 260,000 square miles, or by others, at 250,000 square miles more than that of France.

Surface and Soil. — Coast. — The surface of this extensive country is extremely diversified by mountains, hills, plains, and valleys. The Atlas traverses it in its greatest length; a range, at some points, from 800 to 1000 feet high, form the eastern boundary, from Cape Nun on the Atlantic Ocean, to Cape dell' Acqua, west of the mouth of the river Mulwia, in the Mediterranean. The general direction of the Atlas is from north-west to north-east, and is the Greater Atlas, and north of the Lesser Atlas. (p. 72.) The Greater Atlas, towards its southern extremity, consists of two ranges, both beginning near the Atlantic; the southern, commencing at Cape Nun (south of 29°), is called Mount Adrar, and extends to Cape dell' Acqua, coming nearly to Cape Bellini (4°), or Ras Aferini, bears the name of Mount Beubuan. The two ranges unite about 31° N. lat., and about 100 miles from the shore. Between these two ranges is the plain of Tarudant, or Sus-el-æsa. Both the ranges, as well as the remaining portion of the Atlas, extend for about several months in the year, but probably none of the summits attain the limits of perpetual congelation. The Greater Atlas is not very wide, being generally traversed in two or three days. Two mountain-passes lead over Mount Beubuan, one called Beloual, and another called Belavin, about 60 miles farther east, which connects the town of Tarudant with Figa, in the plains of Morocco. A third pass is stated by Calilh to lead from the town of Tatta in Drah, or Daras, to the town of Morocco; and a fourth pass, which is the highest mountain pass in Morocco, is the road consists of ridges and valleys, and sometimes also mountain-plains: it is well cultivated in some parts, and in others serves as pasture-ground towards the southern extremity of the country. Between 31° and 32° N. lat., and 9° W. long., where the range turns more to the north, and takes the name of the Lesser Atlas, the width of the range increases considerably, and as most of the longest rivers rise in this part of the country which may be seen by the map, and is the source of the river which extends to the north, and at Cape dell' Acqua; the other, called Er Rif, turns first north-west, then west, and again north-west, until it terminates in the high and mountainous coast which forms the southern shores of the Straits of the Great Mouse. The river extends over 60 miles, and on the coast of the island of Djerba, and at the mouth of the small rivers only. Mount Abya, or the Monkeys' Hill, opposite the rock of Gibraltar, rises to a considerable height.

The elevated and rocky coast continues along the Atlantic nearly as far south as the mouth of the river El Kos, or Lucues. The country adjacent to the coast is rather hilly than mountainous, though a few rocky masses rise to 2500 feet; the soil is mostly gravelly, and sustains only a scanty vegetation, with a few trees. The river (water) El Kos traverses an immense plain called M'dina, or 250,000 square miles, or very extends; VOL. XIV.—3 K
eastward to the ranges of the Lesser Atlas, and southward to the banks of the river Sebo. Its surface is partly level, and partly traversed by low ranges of hills; but the river, flowing toward the southeast, as the rivers make numerous bends in the plain and have a gentle course. On its western border the sea forms a range of sand-hills, by which several small rivers are prevented from reaching the ocean, and form along the shore a combination of coast-line and sand-hills. The largest of these sand-hills is 5 miles long and the larger, Murja Kas el Dowla (the lake with the winding head), 10 miles long by one and a half broad. The range of sand-hills which separates these lakes from the sea is about 250 feet high. The land falling back of it is a plain filled with sand and can only be entered by small vessels. The plain of M'shara-er-Rumla, though the soil is light, is very productive in corn, and contains excellent pasturage-grounds. It is also connected on the east with the fertile river Sebo, is about 60 miles east of the town of Fez, between the effects of the Lesser Atlas.

The plains continue south of the Sebo river to the banks of the Oum-er-begh, or Morbeya, and still farther south, but they gradually change their character, and their fertility greatly diminishes. The Ouan and Adrar mountains, sea-shore, which in many places is rocky and inaccessible, and extends in wide plains ascending like terraces one above the other, the eastern being always some hundred feet higher than that immediately west of it, until at the base of the mountains the declivity of the land is very gentle and night falls. The inferior fertility of these plains seems to depend more on the climate than the soil, which chiefly consists of a light loam. Water is found only at the depth of from 100 to 200 feet. The rivers run in channels several feet below the surface of the plains. The same is true of the other plains. A range of hills, rising between 500 and 1200 feet above the plains, divides them from the southern plain, which extends along the base of the Greater Atlas. In the town of Marrakesh, from which it obtains the name of the Plain of Marocco, it is about 25 miles wide, but it grows still wider as it advances westward. This plain, which is drained by the river Tensift, is about 1500 feet high near the town; but it grows lower and wider as it descends the river westward, where it is joined by the rivers of Anti-Atlas and the river Morbeya, to the south of the town of Tifnit. The region is called the Sebou, and it is a broad, generally sandy, and sometimes rocky. In fertility it is much superior to the central plains.

The plain of Tarudant, which is the most southern, lies between the river Sebou, the Ouan and Adrar mountains, and the plains of the coastal range. It appears to be traversed nearly in the middle by a range of hills which divide it into two wide valleys. The northern, which alone has been visited by Europeans, is level, and of great fertility, as the extensive woods and plantations of olives and oranges prove. The southern is more cultivated and consists of flat plains.

The countries east of Mount Adrar and south of the Greater Atlas are known under the names of Draha or Dara, Tallett, and Segelmesa, and are parts of the Biulul-.getUsername(), or the 'country of the plains.' They have not been visited by Europeans, and some of the country, the town of Cap de la Boum, which represents a small town near the sea, is called the Sebo river, which, except in rainy seasons, forms a few branches on the western declivity of the Lesser Atlas, and is joined by several affluents which descend from the southern declivity of the range of Er-Riff. After a course of about 200 miles it enters the Atlantic, near the town of Melidja. Though a few vessels have been seen on the coast of Er-Riff with rather large ranges of mountains compared with other rivers of this country, its mouth does not afford a harbour: a bar of sand, a quarter of a mile from its outlet, extends almost across, and is nearly dry at low water of spring-tides. Inside the bar there is from time to time an entrance, which is used by the vessels of the country to discharge their produce. A considerable channel is newly made by the Moroccans, which allows a passage of 250 feet. The waters are used for irrigating the adjacent country.

The river Regreb is an inaccessible river running barely more than 100 miles; but its waters are used for irrigating, and its mouth forms the harbour of the towns of Skal or Sis, and Malabar or the river Koura. A few, about one eighth of a mile, from the entrance, runs almost across in a west-south-western direction, with three or four feet water on it at low-water, leaving a channel at each end. The north-south channel is that which is used. The tide rises from three to four feet; the harbour is sheltered, and has sufficient water for a frigate.

The Oum-er-begh, or Morbeya, the largest of the rivers that fall into the Atlantic, likewise rises in several branches in the western declivity of the Lesser Atlas, and probably extends to the plains on either side of the river. Its mouth is partly unknown, but it probably extends south towards the small town of Assam, which has no commerce. A bar of sand and mud is a quarter of a mile across, and the river is almost dry at low-water, and boats alone can enter it.

The river Tensift, which waters the plain of Marocco, rises in a subordinate range of high hills, about 40 miles east of the town, and runs nearly 150 miles with a winding course. It is said that very probably the mouth of this river also is closed by a bar.

Through the plain of Tarudant, or Sus-et-acid, flows the river Sus, which rises in Mount Beibaus, north-east of Tarudant, and flows westward into the sea, which it enters at the distance of 30 miles of the port of S. Quin, where it is called the Sus. It may be considered as the southern boundary of the empire, the Arabian chiefs who govern the country south of it being only nominally subject to the emperor of Marocco, and throughout it is a large river, flowing into the Atlantic as the Draha, or Dara. Until lately it was supposed that this river was lost in the moving sands of the Sahara; but according to the statement of Wilkinson (London Geographical Journal, viii.), it reaches the sea 32 miles south-west of S. Quin, where it is called the Sus. If this statement is true, the Draha, which rises in the southern declivity of the Greater Atlas, south-east of the town of Marocco, must have a course of more than 500 miles but nearly the whole of it is unknown. It is however said that it passes through several marshes, and that it dissects the districts of Draha, till it falls into the River El Harib; and that two considerable towns, Fatta and Alaska, stand on its banks.

From the southern declivity of Mount Atlas descend three other rivers, the Feiile, Fis, and Gbir. We are not further informed, but with them that they run soutwestward, and are lost in the sands of the Sahara.

Climate.—The climate is not so hot as might be expected from the position of this country. A great part of the empire is subject to the alternation of the sea and land breezes, and those districts which lie beyond their reach are cooled to some extent by the winds which blow from the mountains. Frost and snow now only occur on the mountains. Along the sea the thermometer never falls below 37° or 40°, and even in the hottest places, at S. Cruz and Taroudant, its appearance the heat and fertility of these countries is subject to frequent drought. Little is known of the climate south of Mount Beibaus, except that the heat is very great, and that the southern declivity of Mount Atlas has no rain, being exposed to the dry and hot winds which blow from the Sahara and disperse the few vapoors which occasionally rise
Inhabitants.—The population of this empire is differently estimated. Jackson thought that it amounted to fourteen millions, which number is reduced by Captain Washington to five or six millions. Graberg assigns to it 8,500,000 inhabitants, and states that the population is composed of the following nations, in this proportion:—

<table>
<thead>
<tr>
<th>Nation</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazighs, namely</td>
<td></td>
</tr>
<tr>
<td>Berbers</td>
<td>2,300,000</td>
</tr>
<tr>
<td>Shelehous</td>
<td>1,450,000</td>
</tr>
<tr>
<td>Arab, namely</td>
<td></td>
</tr>
<tr>
<td>Moors, Ludayas, and other mixed tribes</td>
<td>3,550,000</td>
</tr>
<tr>
<td>Beduins, and others of pure blood</td>
<td>740,000</td>
</tr>
<tr>
<td>Jews</td>
<td>339,500</td>
</tr>
<tr>
<td>Negroes, slaves and freemen from Soudan, Pachulas, Mandingoes, &amp;c.</td>
<td>120,000</td>
</tr>
<tr>
<td>Europeans, Christians</td>
<td>300</td>
</tr>
<tr>
<td>Renegadoes</td>
<td>200</td>
</tr>
<tr>
<td>Total</td>
<td>8,500,000</td>
</tr>
</tbody>
</table>

The Amazighs, or Mazirghis [Berkers], are the most ancient inhabitants of Northern Africa, and one of the most widely-distributed nations of that continent; as is proved by the language, the different dialects of which are spoken by the tribes which extend from the banks of the Nile to the Atlantic, as the Tibboos and Tuarecks of the desert, the Fililias in Segelmessa and Taflet, and the different Sheleh tribes on the Atlas and Mount Bebuan. Most of the tribes occupying the southern districts of Tunis and Algiers also speak the same language. The Amazighs are divided into Berbers and Shelehs. The Berbers occupy exclusively the mountain-region which extends along the Mediterranean. They are composed of two other dialets; the first inhabiting the mountains of Er-Riff, and are divided into several tribes. Other tribes are spread over the mountains of the Lesser Atlas and the basin of the river Mulia, as far south as the source of that river. The Shelehs occupy the greater portion of the plains of the same name, and that of Mount Adrar. It is now the general opinion that their languages are only dialects of one language; but the tribes differ somewhat in their physical character and in their customs. The former are nearly white, of middle size, well formed, and rather robust, and, though they cultivate the land with greater propriety than the Berbers, they have a much less extensive body of property. In the plains they build houses of stone or wood, and always enclose them with walls. Their chief occupation is that of rearing domestic animals, and they cultivate some patches of ground and rear bees.

The Shelehs are chiefly agriculturists, and exercise several trades; their houses are always built of stone, and covered with tiles or slates. They are less robust than the Berbers, but have the same dark skin, and are distinguished by the peculiar custom of wearing the beard. They measure the Portuguese, from whom some authors think they are descended. They are much more advanced in civilization than the Berbers.

The Moors are the most numerous of the nations that inhabit Morocco. They inhabit the entire coast, which is called Moghef, or Occidental, is a dialect of the Arabic; but it is intermingled with many words from the language of the Amazighs, and is still more with Spanish words. The latter circumstance may be ascribed to the emigration of their ancestors from Spain after the conquest of Granada. These emigrants settled in the towns and plains along the Atlantic.

The Moors of Morocco are of meddlesome station, and rather slumber when young, but grow stout as they advance in years. Their colour varies between yellow and black, which is principally to be ascribed to their frequent marrying black women from Sudan. They are the only nation of Morocco with which the Europeans have an immediate intercourse, and they are the principal inhabitants of the towns; they fill all the offices of government, and form the military class. [Moors.]

The Arabs are the descendants of those who emigrated at the time when the Mohammedan religion was diffused among the Hejeh, Yemen, and Persia. A few families live in the towns, and the Beduins are dispersed over the plains, where they adhere to their wandering life, living in tents, and following the pastoral occupation. They are a hardy race, slightly made, and under the middle size. Their language is the Korseh, or Arabic of the Koran, which they pretend to speak in its purity.

The Jews are intermixed among all these nations: their condition is best among the Berbers, where they follow different trades; but among the Shelehs and Moors they are much oppressed; and exposed to the most ignominious treatment. They are very numerous in the seaports and commercial towns.

The negroes, who are imported as slaves, frequently obtain their liberty; and as they are distinguished by fidelity, the emperors of Morocco have treated them with the same guard of them, which is the only standing army of the empire, and at present not above 5000 strong.

Manufactures.—As the inhabitants dress chiefly in wool, the manufacture of woollen cloth is general, but the material is usually of inferior quality. There are some woolen manufactories on a large scale, which supply articles of export. In the town of Fez the red caps are made which are used in all the countries that border on the Mediterranean, besides several kinds of silk goods, especially scarfs, which are used as ornaments, and some others, made of gold with thread. The best kinds of silk stuffs, called Culyaan, are made of silk imported from Syria; the more common material is got from the Beduins, whose wives rear...
The inhabitants of Fez are also distinguished as goldsmiths, jewellers, and cutters of precious stones; many of them are also occupied in making marocco leather and silk-worms. It subject to inundations. It formed at Magdore, and Suera, as the Moghrebins call it, the part of the town of Marocco, lies on the sea-shore between Cape Canut and Cape Gher. It was founded in 1769. Marocco is built on a low shore infesting of moving sand, and extends from 3 to 15 miles in extent, as the country begins. It is regularly built, the streets being straight, but somewhat narrow. The Europeans settled here have erected several large buildings in the African style considering the part of the town called the Fortress, and contains the custom house of the palace of the Pasha, the other public buildings and the houses of Europeans; the other part is only inhabited by Jews. The harbour is formed by a small island, lying south, which, at ebb tide, is inconsiderable; at low tides there are only 10 or 12 feet of water in the harbour, and large vessels are obliged to anchor without, at a distance of about two miles. The commerce of this place with London, Amsterdam, Cadiz, Leghorn, Genoa, the Seaports of Europe.

The hill, wide regularly one built thriving tome seaports, a wool, seille of ants they reside. valley as silkworms.

The division between the two parts of the

The town is divided into district, which is dyed red. Their bright colours are considered inimicable in Europe. Very good sole-leather is made in Rabatt and Tetuan.

Carpets are chiefly made in the province of Daculla, south of the river Omur-beegh, and are known in Europe by the name of Turkey carpets. They are much esteemed for their colouring, and the great variety of the pattern: the better kinds are very dear.

Political Division and Towns.—The empire of Marocco is composed of the two kingdoms of Fez and Marocco, of the former occupied and conquered north of the river Omur-beegh and the basin of the river Mulavia; the kingdom of Marocco comprehends the remainder, with the exception of the countries south of the Greater Atlas and Mount Bebuana, which are considered as a separate kingdom. At present, the empire is divided into thirty governments, of which fifteen belong to Fez and fifteen to Marocco. In the latter the country between Mount Bebuana and Mount Adar is included. The countries of Draha, Tataf, and Segelmano are divided in the same manner.

Along the coast of the Mediterranean the Spanish posses Melilla, near Rasuldir, Cape Teres Forceas, and farther westward Alhucemeras and Penion de Veles, three small fortresses, which have no communication with the interior.

Not far from the Straits of Gibraltar is Tetuan, built on the declivity of a hill, about a half a mile from a small river (Martil) which falls into the Mediterranean about five miles from the town; the mouth of the river forms a harbour for vessels of all kinds. It carries on a considerable com-

The population is 11,000 (Graberg), or 40,000 (Semple).

The near the eastern entrance of the Straits of Gibraltar is the Spanish town of Ceuta [Creta], and near the western the town of Tangier, where the European consuls-general reside. The city is fortified on a hill, near a spacious bay 14 miles west of Cape Spartel, and its harbour is defended by three small fortresses. The streets are wider and straighter than in other towns of the empire; but except the houses of the European consuls, a few belonging to rich per-

The population is 20,000 (Graberg), or 5000 (Grant). The town is defended by a line of forts on the shore.

The Seigneur is a large town, built on a large island, south of the river Oum-beegh, and is defended by a line of forts on the shore.

The principal articles of exportation are wool, corn, and wax, and the manufactured goods of Fez and Meknes. The European and East India goods, den-

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houses, which are only one story, have flat roofs and terraces, like those of Spain, and the rooms open into a court, which is sometimes surrounded by arcades and embellished by a fountain. The houses have no windows, no fire-place, and no furniture, except a cushion or two. Large aqueducts supply the city with water, and no one drinks from the public fountains. On the south of the town, but without the walls, is the imperial palace: a wall of a quadrangular form, enclosing a space about 1300 yards long by 600 wide, is equal in strength and height to the walls of the town. The palace is surrounded by a moat, which is divided into compartments, forming the imperial residences. The floors of the rooms are tessellated with various coloured tiles, but otherwise they are plain, the furniture consisting of a small cabinet at one end, and some cushions. There are nineteen mosques, two colleges or madrasses, and one hospital in this town. The principal mosque, El Kontubia, is distinguished by a lofty tower, 220 feet high, a masterpiece of Arabic architecture. The bazaar, or kaartia, is a long range of shops, covered in and divided into compartments, in which the productions of the agricultural and manufacturing industry of the country, as well as goods from China, India, and England, are exposed for sale. There are some manufactures; the tanneries of Marocco are celebrated in the world. Constantinople states that the population cannot exceed 100,000, and perhaps not above 80,000, including 5000 Jews; Graber assigns it only 50,000 inhabitants. Plague and famine have reduced a population which was formerly much greater.

The capital is Agadir, about 60 miles from the port of Agadir or S. Cruz. It is built in the middle of an extensive plain, and its walls, which are now in a ruinous state, are very extensive. The houses are low and built of earth. Surrounding the town is a wall, so that the place rather resembles a well-peopled country, than a town. The inhabitants are industrious, and the woollen dresses and marocco leather made here are much esteemed; copper and sulphur are abundant in the neighbourhood, and a considerable quantity of the copper is made into domestic utensils in this town. The population is 22,000 (Graber).

In this province are also the towns of Tedsii, with 15,000 inhabitants, and Tuni, which, though less populous, is said to be more populous. Further to the south-west, near the banks of the river Draha, is the village of Nun, 50 miles from the sea, with 2600 inhabitants. It is one of the points from which the caravans depart for Sudan.

Caravans for Sudan consist of 5000 camels, and the caravans of Tetuan, Fezzan, and Tatta, two other places from which the caravans start on their route to Sudan. The former is said to be a considerable place, with 10,000 inhabitants (Grabber), but Caillée in traversing this country neither saw nor heard of any town of that name.

Education.—The Moors send their children to school at the age of six years. The elementary schools, which are very numerous, both in the towns and in the country, are either private or public establishments. The former are called mdders, and the latter, tudes or madrasas. The children reading, writing, and correct pronunciation are taught; the children also learn by heart some passages of the Koran. The method of teaching resembles in some respect that of Bell and Lancaster, which seems to have been borrowed from the latter. In the beginning of the primary classes, they study the koran by heart, and passages from the higher schools, called in the singular madrassa, and in the plural madrasa, where they are prepared for the university of Fes, called Dar-el-I'm (or the House of Sciences), or other colleges. In the colleges they are instructed in grammar, theology, logic, rhetoric, medicine, jurisprudence, geometry, astronomy, and medicine. The commentaries and traditions relating to the Koran, the laws, legal procedure, and all the formalities to be observed in the courts, are also explained. There are three degrees; students called tudes, doctors called phić, and wise men 'blem, in the plural o'lam. As there are no printing establishments, calligraphy, called gedalak, is enumerated among the sciences.

Commerce.—The Moghrebins carry on a very active commerce with Sudan and the interior of Africa, and with Egypt and Arabis by caravans, and with several parts of Europe by sea. The caravans, when they set out from the commercial towns of Tetuan, Fezzan, Marocco, and Taflet, generally consist of about 150 persons and 1000 or 1500 camels, and are either called colour but when they have united at Tatta or Akka, on the Drahe, river, the point where they enter the desert, they consist of about 500 or 600 persons, with 16,000 and even 20,000 camels. Towards the southern border of the desert they come to the oases of Touadendi and El Chbi, which are named Tetuan, and are inhabited by persons who buy large quantities for the market of Sudan. From Timbuctoo, as a central point, the merchants traverse the adjacent countries, exchanging their goods for those of Sudan. They import into these countries rock-salt, woollen cloth and dresses, soap, tobacco, Turkish daggers, and blue cloth, and take in return ivory, rhinoceros' horns, incense, gold in bars and powder, ostrich feathers, gum-arabic, cotton, assafetida, indigo, and slaves. Graber estimates the annual value of the exported goods at one million dollars, and imports from the same country to an amount of two millions.

The caravans which go to Mecca are chiefly composed of pilgrims, and are much more numerous. They depart only in the months of May, June, and July, and leave from Fez by Tetsa over the Lesser Atlas, traversing the northern districts of Algiers and Triboli, in which latter country it may be said to terminate at Kairou. Hence it passes southward through Gadamis and Fezzan to Alexandria and Karnah, and thence to Egypt. The road passes from Marcobo to Tetsa, and thence through the southern districts of Algiers and Tunis to Gadamis and Fezzan, whence it leads to Alexandria and Fezzan. Indigo, cicuta, oil of cloves, argan oil, and some less important articles, woolen articles manufactured in Fez, Tetsa, and Taflet, are exported by these caravans, and they import the cotton and silk goods of India, some Persian silk-stuffs, rose-oil, amber, musk, balsam, and spices, but particularly cotton, sugar, and rice. They also trade with the Tents, and Kahira, and Graber thinks that the annual transactions of the caravans in that town amount to two millions of Spanish dollars.

European vessels visit the harbour of Tetuan, Rabat, Salou, and Mogadore, and export the produce of the empire to Italy, France, Spain, England, and Holland. The principal goods exported are:—wool of good quality, which goes principally to Genoa, Marseille, and Holland; wax, to Leghorn, Marseille, Cadiz, Lisbon, and London; hides of cattle and of goats, to Spain and Portugal; and tanned and raw hides for the manufacture of leather in the north of Africa, which is inferior to that brought from the Senegal, mostly to London and Holland; copper, to Holland; bitter and some sweet almonds, from Mogadore to Holland; goat-skins, especially those brought from Tetuan, to England; edible gums, of the species of the gummoeacron, argan-oil (Grabber), and also olive-oil; archil, ivory, especially to Holland; ostrich-feathers, white and grey, to England; dates, to England and Lisbon; and corn, to all places where its exportation is permitted. Among the less important articles some manufactured in the empire, as scarfs of wool and silk, red or yellow marocco leather slippers and shoes, the black cloaks of Tarantud, and the shawls of Fez and Tetsa.

Among the goods which are imported, the cotton-cloths brought from the East Indies and from England constitute by far the most important articles. There are also imported different kinds of woolen stuffs; raw silk and silk stuffs: colonial merchandise, especially sugar, pepper, and ginger; rice from the south, and cinnamon; cotton, tobacco, mastic, cochineal, alum, bar-iron from England; steel from England and Trieste; iron-wire, tin and nails, coral, looking-glasses, knives, cotton, brimstone, earthenware, and glass. In 1891 the number of vessels which entered the ports was sixty-four, and the tonnage 3870 tons. In the same year ninety-four vessels left the ports, with a tonnage of 5849 tons. The imports were valued at 172,000l., and the exports at somewhat more than 131,000l.

Government.—The government is absolutely despotic, even more so than in the Turkish empire; the people are much
oppressed, and the Christian merchants exposed to great losses by capricious ordinances.

Maronites. The name of a community of Christians belonging to the Western or Roman church, and living on Mount Lebanon. They are neighbours of, and allied to, and in some places mixed with the Druses, and, like them, independent, in consequence of the division of the ancient territory of Phœnicia, between the Greeks and the Phœnicians. The Maronites occupy the valleys and fastnesses of the principal ridge of Lebanon east of Beirut and Tripoli, and they extend inland as far as the Bekaa, or plain between the Libanus and Anti-Libanus, where they are mixed with the Druses, thus forming a distinct though not isolated people. The town of Zhalik, in the valley of Bekaa, contains between ten and twelve thousand inhabitants, chiefly Maronites. There are also many Maronites at Beirut and Tripoli; but the tract of country in which the great bulk of the Maronite church, but the regular clergy, which reside along the ridge of Libanus from the Nahr el Kelb, a stream which enters the sea 12 miles north of Beirut, to the Nahr el Kheir, which enters the sea north of Tripoli, near the island of Roual, the ancient Arvoulus, or Arabola, and which afterwards became the Bosphorus of the Romans, or Ansaiel, who extend to the northward towards Latakieh, and the Ismaelians, who live further inland near the banks of the Orontes. [ISMAELITES.]

To the eastward the Maronites have for neighbours the Moslems, the inhabitants of the city of Damascus, the Bani Ali, who live under their own emir, and occupy the belad or district of Baalbek and part of the Anti-Libanus; and on the south they border on the territory of the Druses, with whom they form one political body, being subject to the Emir Boscheir [Dawaa], in so far as they join the land; for they calls them to arms for the common defence, and pay them their share of the tribute, which the emir paid formerly to the Porte, and now pays to the pasha of Egypt. But in their internal concerns the Maronites are governed by their own laws, and have a civil and religious constitution of their own, which is admitted to be more regular and perfect than that of any other nation. The Maronites are of the old Syriac or Jewish sect, their clergy are always regular, and their churches and monasteries are under the jurisdiction of bishops, of whom there is one in every large village. The bishops are under the obligation of celibacy. The bishops collectively elect the patriarch, who is confirmed by the pope, and who resides at Beirut, the capital of their state. Beirut is a large town, surrounded by the mountains, and celebrated for the beauty of its situation; and Tripoli, where there is a printing-press, which furnishes the elementary books for the use of the Maronite schools. Not far from Kanobin is the large village of Eden, ten miles above which, and high up the Libanus, is the famed clump of old cedars, called the Cedars of Solomon, of large dimensions, but now reduced to seven in number (Lamarque, Voyage en Orient; Richardson), not including the younger and smaller ones. Dr. Richardson measured the trunk of one of these trees, and found it to be 40 feet in circumference.

The whole clump of old and young trees may be walked round in about half an hour. Old cedars are not found in any other part of Libanus.

At the opposite or southern extremity of the Kesrouan is the valley of Antounieh, which is the residence of the papal legate and of some European missionaries. Near it is a convent of Maronite nuns.

The Maronites derive their name from a monk of the name of Maro, who, in the fifth century, collected a number of followers, and founded several convents in these mountains. When the Monothelite heresy prevailed in the East in the seventh century, and was favoured by the court of Constantinople, many Christians who did not embrace its tenets took refuge in the fastnesses of Libanus, around the convents; and the name of Maro was ascribed to the population of the mountains. This is the account of the Maronite sects: others pretend that the Maro-
tion of the theory of Rameau, though he was by no means a slave to it—that his learning was considerable, his industry immense, his gnomes trenchant, and his manners engaging. In 1793 M. Gerber spent some weeks with him at Berlin; he then possessed all the vivacity of youth, and his conversation was witty and agreeable. Shortly after this he began to show symptoms of mental as well as bodily disease, and was declared to be in a hopelessly languishing condition, and constitutes one of the most common articles of food.

The inhabitants belong to the same race that peopled the Society and Sandwich Islands, of which their language and bodily conformation offer unqualified proof. Their com- position is of a very different character, but the women are much lighter than the men. Many of the navigators speak of them in terms of admiration, and consider them as perfect models of symmetry. Langsdorff states that the measures taken on the body of one of their chiefs agreed exactly with those of a man of the same size and age. They have been mentioned in various statements, and it seems that the difference between individuals is greater here than in most other countries, and that men vary in height between four feet ten inches and six feet. They have carried the art of tattooing the body to a greater extent than any nation, the bodies of distinguished persons being covered all over with regular figures of a very tasteful pattern. The people are cannibals. They eat both the bodies of their enemies, who are killed in battle, and also other persons, at the instigation of priests, or out of mere curiosity, and occasionally, when they have always shown themselves very friendly towards Europeans, but the missionaries who have been among them have not been successful in their labours.

(From Cook's Second Voyage; and La Perouse's Voyage: Langsdorff's Voyages and Travels in Various Parts of the World; Waldegrave and Bennett, in London Geogr. Journals, vols. iii. and vii.)

MARQUIS, a title of honour used in England and on the Continent. Persons who have this title in England are the second in the five orders of English nobility. The dukies only are above them. In parliament all peers have the same privileges, by whatever title they are known. Marquis in England have this privilege above earls, that their younger sons are addressed as 'my lord,' as Lord Henry Petty, Lord John Thynne.

All titles of honour seem to have been originally the names of important offices, or to have denoted persons invested with a peculiar political character. Marquis is generally connected, as a term of dignity, with the person who has been suggested, to have designated originally persons who had the care of the marches of a country. [MARCHES.] In Germany the corresponding term is markgraf (markgrave), which seems to be 'lord of the marches.'

(Markgraf von Nassau, for instance.)

(foreign marquis, the marquis of Juliers, was made an English peer with the title of earl of Cambridge, and this circumstance probably suggested to King Richard the introduction of this new order of nobility. The person on whom it was conferred was his favourite Robert de Vere, earl of Oxford, who was created Duke of Ireland and marquis of Dublin in 1385. But the title had no long continuance in him, for three years after he was created and his son, who was born in 1397 only, the illegitimate sons of John of Gaunt was created marquis of Dorset, but he was soon deprived of the title, and his son had only the earldom of Somerset. The title of marquis of Dorset was however revived in the male family in 1397 when also William de la Pole was made marquis of Suffolk.

In 1470 John Nevil, earl of Northumberland, brother to Richard Nevil, earl of Warwick, the king-maker, was made marquis Montacute, but he was soon after slain at the battle of Barnet, and the title became lost of Cornish, which was made marquis of Evesham.

In 1475 Thomas Grey, earl of Huntington, son to the queen of King Edward IV, by her former husband, was made marquis of Dorset; and in 1489 Maurice Berkeley, earl of Nottingham, was made marquis of Berkeley. Henry VII. made Henry Courtenay, earl of Devon, marquis of Exeter; and he made Anne Bolyn, a little before his marriage with her, marchioness of Pembroke. William
MARRIAGE

Parr, earl of Essex, brother of Queen Catherine Parr, was created marquis of Northampton by King Edward VI.; and William Powlett, earl of Wiltshire, marquis of Winchester.

All these titles had become extinct in 1571, except that of marquis of Winchester. This title still continues in the male representative of the original grantee, though for a century or more it was little heard of, being lost in the superior title of duke of Bolton.

Of the new marquises, nor did King James I. till the fifteenth year of his reign, when his great favourite George Villiers was created marquis of Buckingham.

Charles I. advanced the earls of Hertford, Worcester, and Newcastle to be marquises of those places; and Henry Pierpount, earl of Kingston, was made marquis of Dorchester.

Charles II. advanced the earl of Halifax to be marquis of Halifax in 1682, and James II. made the earl of Powis marquis of Powis in 1687.

An act in relation to this title was introduced at the Revolution. This was the granting of the title of marquis as a second title when a dukedom was conferred. Thus when Schomberg was made duke of Schomberg he was made also marquis of Harwich; when the earl of Shrewsbury was created duke of Shrewsbury he was also made marquis of Alton; and when the earl of Bedford was made duke of Bedford he was also made marquis of Tavistock.

There were many other creations of this kind in the reign of William III., and several of marquises only. It is not necessary to insist on the instances, either in this or the subsequent reigns. Of the existing dukes eleven have marquises in the second title, which is borne by the eldest son during the life of the father.

The only marquises sits in the House of Peers as a marquis, and whose title dates before the reign of George III. is the marquis of Winchester. The other marquises are all of recent creation, though most of them are old peers under inferior titles.

If the title had not to be known in Scotland till 1599, when marquises of Huntly and Hamilton were created.

MARRIAGE is a contract by which a man and a woman enter into a mutual engagement, in the form prescribed by the laws of the country, which they reside, to live together as husband and wife during the remainder of their lives.

Marriage is treated as a civil contract even by those Christians who regard it as a sacrament, and as typical of the union between Christ and the church. The religious character of the marriage contract does not make it anything but a complete civil contract, binding according to the laws of the country in which the marriage is contracted. The authority of the sovereign power in regulating and prohibiting marriages is therefore not affected by the superintendence of the church.

Among Protostrians marriage has ceased to be regarded as a sacrament, yet in most Protestant countries the entrance into the marriage state has continued to be accompanied with religious observances. We think right to note here, as essential to the constitution of a valid marriage, any further than the sovereign power may have chosen to annex them to, and incorporate them with, the civil contract.

After the establishment of Christianity, in order to avoid the several customs among the nations who were not known to be married, and also to secure and perpetuate the evidence of marriage, where really contracted, it became usual to make the marriage promise in the presence of the assembled people, and to obtain at the same time the blessing of the church, which was the only sanction of it, and without the observance of which solemnities which the Anglican church is wont to observe, and that before consummation of this marriage he had contracted marriage with another woman, and committed adultery with her, and with another lady, who knew the marriage.
and even with the present restrictions intermarriages in families are frequently productive of the most injurious consequences in respect of mental and bodily health. 

The impediment to marriage arising out of consanguinity applied to the same degree to illegitimate as to legitimate relations, and the impediment resulting from affinity is created by illicit connexion as well as by marriage. The Council of Trent restricted the impediment of affinity arising out of illicit connexion to the second degree.

2. A marriage by a contract marriage with the other. An idiot therefore, who cannot understand the nature of the conjugal relation, is incapable of contracting marriage. So is a lunatic, except during a lucid interval. But however absurd it may appear, children are probably, have been, after all, subject to the taint of the marriage engagement at seven; and though the contract is not absolutely binding upon them until they reach the age of consent, still the marriage of a child above the age of seven would prevent its forming a second marriage until the age of consent as, until that age it cannot dissent from the first marriage.

3. There must be an actual contract of marriage. This, at common law, might be by words of present contract, however expressed, or by conduct; or words of future contract, followed by cohabitation.

The unlimited freedom of marriage was first broken in upon in England by the Marriage Act of 1753 (26 Geo. II., c. 39), the principal provisions of which form the basis of all subsequent acts intended to be taken from the canons law, an observance of which was, before this statute, necessary, to constitute a regular marriage, though a marriage contracted without them was valid.

The restrictions upon the common-law freedom of marriage are by the Statutes as follows:

The 4 Geo. IV., c. 76, contains the following provisions: Banquets of marriage are to be published in the church, or a public chapel in which banquets are allowed to be published, or of the parish or chapel wherein each of the parties, or of either the parties, or if it shall be the marriage that is to be solemnized, or of the diocese, or of the county, or of the deanery, or of the archdeaconry, in which the marriage is to be solemnized in any church or chapel not belonging to the parish or chapel within which the usual place of abode of one of the parties has been for fifteen days immediately before the granting of the licence (s. 10). In case of marriage in any other ecclesiastical court, to hinder the marriage, and that one of the parties, for fifteen days immediately preceding, had his or her usual place of abode within the parish or chapel; and where either of the above licences, or in case of marriage or confession, or of twenty-one, that the consent of the person or persons whose consent is required by that act has been obtained, or that there is no person having authority to give such consent (s. 14). The father, if living, of any party under twenty-one, if the certificate of the registrar of the archdeaconry of the county, to whom the marriage is to be solemnized, has not given the licence, or in case of marriage in any other ecclesiastical court, to hinder the marriage, and that one of the parties, for fifteen days immediately preceding, had his or her usual place of abode within the parish or chapel; and where either of the above licences, or in case of marriage or confession, or of twenty-one, that the consent of the person or persons whose consent is required by that act has been obtained, or that there is no person having authority to give such consent (s. 14). The father, if living, of any party under twenty-one, if the certificate of the registrar of the archdeaconry of the county, to whom the marriage is to be solemnized, has not given the licence, or in case of marriage in any other ecclesiastical court, to hinder the marriage, and that one of the parties, for fifteen days immediately preceding, had his or her usual place of abode within the parish or chapel; and where either of the above licences, or in case of marriage or confession, or of twenty-one, that the consent of the person or persons whose consent is required by that act has been obtained, or that there is no person having authority to give such consent (s. 14).
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unless by virtue of a licence by the superintendent registrar, is to be solemnized or registered until after the expiration of twenty-one days after entry of notice, and no marriage is to be solemnized by the licence of any superintendent registrar, or registered, until after the expiration of seven days after the day of entry of notice. Whenever a marriage is not at law able to be solemnized within thirty days from the notice entered by the superintendent registrar, the notice and certificate, and any licence granted thereupon, and all other proceedings, become utterly void; and no person can proceed to solemnize the marriage, nor can the marriage be solemnized new notice entered, and certificate. The certificate of the superintendent or (superintendent) is to be delivered to the officiating minister, if the marriage is to be solemnized according to the rites of the Church of England, and such certificate is to be delivered to the registrar of Quakers for the place where the marriage is solemnized, if the same shall be solemnized according to their usages; or to the officer of a synagogue by whom the marriage is registered, if to be solemnized according to their usages, and in all other cases it is to be delivered to the registrar present at the marriage. Any proprietor, or trustee, of a separate building, certified according to law, as a place of religious worship, may apply to be registered, in the name of such building, and in such cases he is to deliver to the superintendent registrar a certificate signed in duplicate by twenty householders, that such building has been used by them during one year as the place of religious worship, and that they are desirous that the place shall be registered; each of which certificates is to be countersigned by the proprietor or trustee by whom the same is to be delivered, and the superintendent registrar is to send both certificates to the registrar-general, who is to register the building accordingly, and indorse on both certificates the date of the registry, and to keep one certificate with the other records of the general register office, and to return the other certificate to the proprietor or trustee by whom the same is to be delivered, and in the case of the other records of his office, and the superintendent registrar is to enter the date of the registry of such building, and is to give a certificate of such registry under his hand, on parchment or vellum, to the proprietor or trustee by whom the same is to be delivered, and to give public notice of the registry thereof, by advertisement in some newspaper circulating within the county and in the London Gazette. After the expiration of the twenty-one days, or of seven days, if the marriage is by licence, in the case of Hong Kong, or from the date of notice, it may be solemnized in the registered building stated in the notice, between and by the parties described in the notice and certificate according to such form and ceremony as they may see fit to adopt. Every such marriage to be solemnized in the presence of at least two witnesses. In some part of the ceremony, and in the presence of registrant and witnesses each of the parties is to declare—

"I do solemnly, in the presence of God, and of these my witnesses, promise to thee, C. D. to love thee, to cherish thee, and to cleave unto thee in this life, and in all the life to come."

Provided also, that there be no unlawful impediment to the marriage of such parties (s. 20). Persons who object to marriage may be excluded from the marriage if the marriage is by licence, but may, after due notice and certificate issued, contract and register marriage at the office of the superintendent registrar, and in his presence and in that of some registrant of the district, and of two witnesses, with open doors, and between the hours aforesaid, marriage to be void where marriage is solemnized outside of the church, chapel, registered building, or office, or place specified in the notice and certificate, or without due notice to the superintendent registrar, or without certificate of nature duly issued, or without licence, in case a licence is necessary, but if a marriage is solemnized by a registrar or superintendent registrar is necessary, the marriage of such persons, except in certain excepted cases, is null and void (s. 42); as under 4 Geo. IV, c. 72, a marriage would not be void unless both parties knowingly conspired to have it solemnized before the 42nd section. If any valid marriage be had under the provisions of this act by means of any unlawful false notice, certificate, or declaration made by either party to such marriage, as to any matters to which a certificate is necessary, or by another person or solicitor-general may sue for a forfeiture of all estate and interest in any property accruing to the offending party by such marriage (s. 43). Consent to marriage may be withdrawn upon good reason; but it would rather appear that the action is taken to enable the husband or guardian to annul the marriage. The question of consent is not however of such vital importance as under the first Marriage Act (26 Geo. II, c. 33, s. 11), which made marriages without consent of parents, &c. absolutely void. Under 4 Geo. IV, c. 76, s. 23, and 6 & 8 Wm. IV, c. 43, a false statement as to consent subjects the fraudulator, party to the penalties of perjury, and to a forfeiture of all estate and interest in any property accruing by the marriage, to a fine of £100. These statutes do not extend to marriages contracted out of England, or to marriages of the royal family, which are regulated by a particular statute, 12 George III, c. 11.

Before 1835 marriages within the prohibited degrees of consanguinity and affinity were allowed by a declaratory sentence of the ecclesiastical court, after which they became void ab initio, and the issue of such marriages were, by such sentence, rendered illegitimate; and the law is still so with respect to personal incapacity, exogamy, and marriage of persons whose consanguinity and affinity are not regulated by statute. Generally speaking, a marriage, valid according to the law of the country in which it was contracted, is valid in every other country. This rule is however subject to some exceptions, as to marriages, contracted according to the law of the country in which they were solemnized, in which their validity happens to be contested, as restricted in violation of some principle of natural religion or morality, or as to those children the privilege of childless parents which the law had taken away from them, and by some persons as being of vital importance, and in others as being of no moment, and in case of marriage of persons whose consanguinity and affinity are absolutely void to all intents and purposes. And, even in common law, a marriage contracted while there is a licit wife or husband alive is ipso facto void, without any declaratory sentence.

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flīs quīnēstum ex iisdem, vel ante matrimonium, vel postea generātus, susī so legitimis habentis, sācristāsimus constitutionem renovantes, ĵubesmus eos, qui ante hanc legem, ingeniīmum mulierum nupliā minimīn intercedentēs, vel ante contubernio, equīqualitēs sex pudī Procresse: quibus nullīs videiunc uth us, uella ex jus matrimonii legitimae proposita: si voluerint esse uxores ducere, quia ante usurā recondunt cum congregātium legitime cūsium hujusmodi mulieribus ingenīs (ut dictum est) possēnt, in quibus, quae ex mulierum priori contubernio procreātōs, mox postquam nupliēs cum matrībus eorum furenti celebrātēs, suos patrii et in postetatīrā: et cum, his qui postea ex eodem matrimonii suscepti fuerint, vel soles (sui noluit aliter) materiam uxoriārōs clāmātum ex integro, uxoria materiam sitiām ex integro succedēre, quām ab intestato potere hēreditatiem paterēnem, Sc.t.

This was carried still further when marriage was invented with a religious ceremony. It was regarded so powerful, as to have a retrospective operation, upon children born at a time when there was no semblance or intention of marriage of any kind, provided that at the time of the birth there existed no impediment to the marriage of such children. At another period of history, which sprang from a papal chair from 1159 to 1181, pronouncements that "Tanta est vis matrimonii, ut qui ante sunt geniti, post contractum matrimonium, legitime habantēs," Extravag., cap. 6, Quii Sint legit. (Pothen, Traité du Contrat de Mariage.)

Thus, the marriage being affected by mancipatio, worked a legal change of status (Dig. iv. tit. i. s. 1) or diminuto capitis; and it was the least of the kinds of diminutio capitis, or that by which a person underwent no change in his civil capacity, except the being transferred into another, &c.
tions of law which arose on the subject of the dos were numerous and sometimes difficult.

In enumerating the modes by which a man may acquire property per universitatem, Gaius mentions marriage, by which a man acquires a wife and her property, and he observes that all things pass to the husband. The meaning of this passage is perhaps not quite certain; but it is partly explained by what has already been said.

(Dig. 23, tit. 3, 'De Jure Divitii', tit. 5, 'De Fundo domi'; Ulp. 'Inreq. VII, 'De Dobitus'; Tibbaut, 'Systeme des Fon
dericht-Recueil'.)

MARROW, or MEDULLA, is the fat contained in the osseous tubes and cells of the bones. [Bonv.] It consists of an oily fluid, contained in minute vesicles, which are unusually large, and enclosed in spaces surrounded by bonny walls. It is most abundant in the cavities of the long bones, and in the spongy tissue of their articlar extremities, and of the short rounded bones.

Spinal marrow is a fluid, the spinales are names somet-
times given to the spinal chord. [Nervs.]

MARBU'KUUM VUL'GA'RE (White Horehound), a biennial or perennial herbaceous plant, common by roadsides, the official part of which is the leaves; these are to be found in late October, hence the name. When the plant is at its mean grey woolly appearance, possessed of a faint odour, which becomes less by drying, and a bitter sharp taste. Ten pounds of leaves yield four pounds of extract. Their chief constituents are a bitter extractive, with a volatile oil, and phlegmasia. It is a useful medicine.

White horehound, when young, is apt to be confounded with many other labiate plants, particularly the Ballota nigra, or black horehound, which possesses a disagreeable odour. The medicinal properties of horehound are very insignificant, being demulcent and rennet, and its power appears somewhat similar to that of the propolis of the bees.

As a popular remedy, it enjoys great favour in many pul-
monary complaints; but the preparations vended under the name of horehound often contain more efficient ingredients, to which they owe their success.

The plant which comes next to the earth, in order of distance from the sun, is a brilliant star of a slightly red tint. On examination in a telescope, this colour is found to belong to parts of the surface of the planet which have been conjectured to be sandy; the parts which are most thermic are exhibited in this light, and the unequal surface of the earth corresponds with it.

The apparent diameter of Mars varies from 33' to 34', the planet might be supposed to be a cone. Certain white spots, which appear at each pole after the winter of its hemisphere, and disappear during its summer, have been conjectured to be snow.

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summer of 1779, and in the last days of the same year arrived in England, with good health, but with a very trilling income of a few hundred pounds a year. His first attempt was to procure a small post under the government; but failing in this, he resolved to engage in the seafaring life, and on supplying the want of wealth by a prudent economy; and if he afterwards abandoned this course, his departure from it cannot be said to have been of his own seeking. Shortly after his return to England he made the acquaintances of Sir Charles Wilkins. In 1832, he published his last work, consisting of three Essays, the longest, most elaborate, and important of which is the Polyglot or East Insular Languages, a subject which had long engaged his attention and was a great favourite with him. He was indeed the first that pointed out the existence of a considerable body of Sanscrit words in the collected Polynesian languages, and also the first to demonstrate that the Polynesian and Indian languages themselves, extending from Madagascar to Easter Island. In 1831 Mr. Marsden voluntarily relinquished his pension to the public, an act of liberality and generosity in which, at the advanced age of 70, Mr. Marsden felt no remorse. It met, as it well deserved, the warmest applause of the House of Commons. In 1834, feeling, as he himself says, the increasing infirmities of age, he determined in his life-time to bestow his rich collection of coins and medals on the British Museum, at the same time enfeebled his body, leaving him however in the entire possession of his memory. The final and fatal attack did not take place until the 6th of October, 1836, when, at seven o'clock in the morning, after passing a tranquil night, he expired, leaving a gap in the then world of a happy, prosperous, and well-spent life. Agreeably to his own directions, he was interred in the cemetery at Kensal Green. In 1867, shortly after quitting the Admiralty, Mr. Marsden married the eldest daughter of his old friend and intimate, Sir John Stuart, Bart., and, notwithstanding the great disparity in the ages of the parties, the connexion, which lasted nearly thirty years, was one of much satisfaction and happiness, the result, on both sides, of liberal example, good sense, and good temper. His widow is a judicious and accomplished editor of the 'Autobiographical Memoir' from which we have extracted this brief account, and which has been printed for private circulation only, and not published.
uniting against them, a great sea-fight took place, in which the pirates obtained a dear-bought victory. After this battle they left Corsica for Rhegium. (Herod., i. 155-167.)

The Massilian constitution was aristocratic; their laws and their religious rites were similar to those of the Ionians of Asia. The worship of the Ephesian Artemis, or Diana, was cherished with peculiar reverence, both in Massilia itself and in its colonies. The governing body was a senate (consularia), called the Consularia, whose members were appointed for life. This senate had fifteen presidents (presidentii), who formed a sort of committee, by which the ordinary business of the government was managed. Of this committee three persons possessed the chief power. The Tirauchi had an armistice, which in whose families the right of citizenship had been possessed by three generations. (Strabo, lib. iv.)

The Massilions, like the Phocenes, were a naval people; they had several colonies or posts on the coasts both of Gaul, Spain, and Italy: as Egyp, (Egypton), now Ampurias, in Spain; Rhône Agatia (Pon 'Apóthoi), now Aigle; Tauroeis (Tauróeis), or Tauroeumion (Tauróeumion), now Tarente, near La Ciotat; Antipolis (Antipólis), now Antibes; Olbia (Oliba), perhaps the port and castle of Lemnos; Sestus and St. Tropez; and Nicia (Nicia), now Nice. They early and steadily cultivated an alliance with the Romans, which alliance was gradually converted into subjection. In the civil war of Pompey and Caesar they endeavored to come into the party of Caesar, but failed. L. Domitius Ahenobarbus, one of his most zealous partisans, within their walls, and appointing him governor of the city, they closed their gates against Caesar, under pretense of preserving neutrality (n.c. 49). Caesar, hastening into Spain against Ahenobarbus, overran his building, and took his town, with marvellous celerity, left his lieutenant C. Trebonius with three legions to carry on the siege, and appointed D. Brutus to command his fleet. In the first naval encounter the townspeople were defeated, with the loss of of the most valuable place in the province, with sixty machines; and the townspeople being encouraged by the arrival of L. Nasidienius, who was sent by Pompey to their aid, with a squadron of seventeen ships, they refitted their fleet, and put to sea to join him; but the confederate fleet being put to flight by Ahenobarbus, and his machines which Trebonius had prepared for the attack of the city having failed, they were induced to apply for an armistice: this, when obtained, they violated by an attack in which they seriously damaged the works of Trebonius; but finding that they were in danger of losing all, they sent an embassy to Caesar, and on Caesar's return from his victory over the Pompeians in Spain, they surrendered to him. Caesar did not reduce them into entire subjection, but left two legions in garrison while he marched forward into Italy. (Casa, De Bell. Civ., lib. iii. c. 16, 22.)

The municipal government of Massilia remained unaltered, but its political independence was virtually overthrown. The attention of the Massilions was now more directed to literature and philosophy, of which indeed they were already diligent cultivators. They had spread through the south of Gaul the knowledge of the Greek written character, which Caesar found in use among the Helvetii (De Bell. Gall., lib. i. c. 29); and now their city became to the west of Europe what Athens is at the east. The modern charges and frugal habits of the citizens added to the advantages of the place as a place of study, and the most illustrious of the Roman youth resorted thither. Cicero has recorded in the strongest language the praises of the Massilions. (De Leg. Afr., c. 261.) Cicero has put a high encomium upon them into the mouth of a Rhodian ambassador (lib. xxxvii, 54); and Tacitus (Agricolae Pola, c. 4) has spoken in the same strain. (Agricola.)

For more than three centuries the history of Massilia presented little change. In the reign of Honorius, Ahenobarbus attempted to resume the purple at Arles, to the prejudice of the emperor Constantine, his son-in-law, but being baffled in his attempt, fled to Massilia, which he vainly attempted to win, and to which he was taken by Constantine, and Maximian became his own executioner.

In the reign of Honorius, Massilia rebelled the attempt of the Visigothic king Ataulphus, to take possession (Fhous, Biblioth.). But it afterwards became the prey of Burgundians, Visigoths, and Franks. It was taken from the Franks by Theodoric the Ostrogoth king of Italy. Toward the middle of the sixth century (A.D. 567) and 16th), was besieged with the rest of Provence by Vitalian, in order to secure their alliance against the Eastern emporor Justinian, who had sent Belisarius to conquer Italy. While under the Frankish seaport the town suffered from the Lombards, who sacked it (A.D. 576), and from the Saracens, who, in 602, burnt it. It fell to the Franks, about the middle of the eighth century. In the division of the empire of Charlemagne among his descendants (A.D. 836), Marseille was included in the kingdom of Provence of Louis the Pious, and was known as the province of Provence, of Bourgogne Cis-jurana, under Bonos (A.D. 579). The union of this kingdom with that of Bourgogne Transjurana under Rudolph II. (A.D. 930), and the subsequent partition of it united kingdoms by the separation of Coele Sali (A.D. 1032), brought Marseille into the possession of a remote dependency of the German empire. During these changes, from the tenth century Marseille was under the immediate dominion of its own counts. The Marseillean appear to have been actively engaged in the Crusades; and in the third Crusade, several armaments sailed from their port. The commerce of the city at this time was great, and the townspeople were in league with some of the great trading cities of Italy for the purposes of trade and the fostering of commerce. During this period they freed themselves from feudal subjection to their vassals and to the counts of Provence, and organized themselves into a municipal republic, under a chief magistrate called the podesta; but in a few years they were deprived of their sovereignty by hunger and famine, the kings of Provence, brother of Louis IX. It was from Marseille that Charles set sail for the conquest of Naples. The troubles which agitated Provence during the reigns of his successors materially diminished the population of Marseille; and as the resources of the town had ceased to exist, it even in name, the country was exposed to the invasions of the Brabanders, who had risen up during the wars of the English in France and the desolation of that kingdom.

In the contest for the sovereignty of Naples and Provence between Louis XI. of France, the Constable of Bourbon (Beaune, Charles d'Aubusson, of the house of a family of Duras, and subsequently of Aragon, the Marseillean faithfully adhered to the house of Anjou, and rendered signal services to that cause; but in the year 1451 the town was taken by the king of Aragon, and a considerable part of it was sacked and burned; and the town and the country had ceased to exist, plundered by marauders from the surrounding counties. The town recovered however from this severe blow, and became the ordinary residence of René, duke of Anjou and Provence, who died here, A.D. 1480. Upon the death of Charles of Aragon, the kingdom of Aragon and the principality of the County of Provence, brother of Louis IX. was directly under the government of the French crown, to which it has ever since remained subject.

In the war of the emperor Charles V. with Francesco I. of France, the Constable Duke of Bourbon (Beaune, Charles d'Aubusson, of the house of a family of Duras, and subsequently of Aragon, the Marseillean faithfully adhered to the house of Anjou, and rendered signal services to that cause; but in the year 1451 the town was taken by the king of Aragon, and a considerable part of it was sacked and burned; and the town and the country had ceased to exist, plundered by marauders from the surrounding counties. The town recovered however from this severe blow, and became the ordinary residence of René, duke of Anjou and Provence, who died here, A.D. 1480. Upon the death of Charles of Aragon, the kingdom of Aragon and the principality of the County of Provence, brother of Louis IX. was directly under the government of the French crown, to which it has ever since remained subject.
The city of Marseille is built on the coast of the Mediterranean, which here runs north and south. The harbour is formed by a small inlet of the sea, running eastward to the very heart of the city, which is built round it. Its immediate site is a rich valley or hollow enclosed on the land side by hills, of which the highest is that of Notre Dame de la Garde, on the south, and becomes a fort. From the summit of the hill of Vista, on the north side of the town, over which the road from Paris leads, three miles distant, a fine view is obtained of the town and of the numerous Lily-ched houses (said to be five or six thousand), built which cut the valley. The town was once fortified, and there are some remains of its walls and bastions. The entrance from Paris is by a fine broad planted road or wide street, which extends into the lines of the town. The Esplanade, on the shore in the old town. The places or squares are more numerous in the old town than in the new, but neither so large, so regular, nor so ornamental. The town-hall built by the architect Puget, faces the harbour, and is surrounded by houses, and the council-chamber has some fine paintings. There is a new market-house supported by thirty-two columns of the Tuscan order, a fish-market, and other markets; a faro-statue on the shore, north of the city, one of the finest and best machines in France, which is preserved. There is a council-chamber has some fine paintings. There is a new market-house supported by thirty-two columns of the Tuscan order, a fish-market, and other markets; a faro-statue on the shore, north of the city, one of the finest and best machines in France, which is preserved. There is a council-chamber has some fine paintings. The population of Marseille in 1789 was 76,222; in 1801, 111,130; in 1811, 192,217; in 1821, 129,483; in 1831, 121,272 for the town, or 143,115 for the whole commune; and in 1836, 145,230 for the whole town. It is the third town in France for population, being exceeded only by Paris and Lyon. The city has always depended for its prosperity on commerce. The harbour is very safe. Opposite the mouth of it, which is narrow, is a promontory, not permitting the entrance of more than one ship at a time, and where a large number of vessels which enter the port is estimated at 5000 or 6000 in the year; and the customs and other dues collected are estimated at nearly 1,000,000l. annually. The French trade with the Levant is entirely carried on from this port; and the resources of Illyria or Dyrrhachium are also dealt in. The imports are of raw cotton, sugar, dye-woods, and of divers articles from the Levant. The exports are of wines, brandy, corn, dried fruits, oil, soap, hoisery, damask and other linens, woollens, silks, leather, hides, and colonial produce. The principal commodities are silk, gutta-percha, and other leather, glass, porcelain, hats, caps, starch, gunpowder, snuff, alum, sulphur, vitriol, nitre and other chemicals, glue, wax-candles, straw-hats, and cutlery. The refining of sugar and salt, calico-printing, the distillation of brandy, and the manufacture of textile goods, are all conducted. The parishes of anchoives and other salt provisions, dried fruits, olives, and wine for exportation, are carried on. The city is from its commercial character the resort of foreigners of all nations; and the variety of costume, continual bustle, and medley of languages which this occasions are among the most striking features of the place. The character of the people is by no means favourably drawn by our authorities.

Marseille has communications by daily public conveyances with Lyon, Aix, Avignon, Nîmes, Toulon, Geneva, and other places; and by steam-boats at brief intervals with Genoa, Villefranche, Nice, Monaco, Savona, and Venice, and at longer intervals with Port Vendre, Barcelona, and Valencia. It abounds with hotels and has some public baths and handsome cafes. The mistral, a keen, parching, often tempestuous wind, blights all verdure, and its blasts are interchanged with the scourching rays of an unclouded sun; swarms of gnats infest every corner night and day, and the scorpion is often found in the houses and occasionally even in the beds. Marseille has a custom-house, a stamp-office, an exchange, and a board of trade; a commercial court, a subordinate justice court, and a tribunal for the regulation of the fisheries and the settlement of disputes respecting them, the members of which, called Prud'hommes, are annually chosen by the inhabitants. There is also a police. The parish and other Catholic churches and chapels are twenty in number; there are a Protestant church and a Jew's synagogue; with several hospitals and other charitable institutions. They are supported by a combe of bellot-letter and art; an agricultural and a medical society; a high-school, schools of medicine, drawing, music, and navigation; a deaf and dumb school; a public library of 60,000 volumes, a picture gallery, a museum, two botanic gardens; an observatory, where are an astronomical, an observatory, and a public library of 60,000 volumes, a picture gallery, a museum, two botanic gardens; an observatory, where are an astronomical, a meteorological, and a mineralogical society; and a weekly newspaper. There are some remains of ancient buildings; some statues, urns, and medals have been dug up. The diocese comprehends the town and its arrondissement. The bishop is a suffragan of the archbishop of Aix. The town is the head-quarters of the 8th military division, which includes the departments of Basses Alpes, Vaucluse, and Bouches du Rhône. The arrondissement comprises an area of 225 square miles, and comprehends nine cantons, or districts, each under a justice of the peace, and sixteen communas. The population was 178,866 in 1831, and 180,177 in 1838.

MARSHAL, a term which, in its origin, meant simply a groomsman or manager of horses; but from the importance of such an employment in a rude warlike nation, the office of marshal became invested with great military authority, which, according to the usage of the times, drew to itself a considerable civil jurisdiction. One of the principal officers of state is the king's marshal, which office is now held hereditarily by the duke of Norfolk, who is said to have the office of marshal of England, and also an honour in respect of which he is earl marshal. This office was executed in time of war in the king's host or army; in time of peace, in the aula regia, or king's great court. Upon the division of the aula regia the marshal appointed deputies in the new courts. In the King's Bench, the marshal's deputy was called the marshal of the marshalsea of the king's court, or marshal of the King's Bench. In the Exchequer, the deputy was marshal of the Exchequer, or clerk of the marshalsea of the Exchequer. The duty of the acting marshal is regularly to attend the court, and to take into his custody all persons committed to his custody by the court.

The lord high constable, when there was one, was marshal, and the executors of the estate of the constable were the judges before whom the court of chivalry or court martial was held. This court had cognizance of contracts touching deeds of arms and of war arising out of the realm, and of all appeals [Appeal] of offences committed out of the realm, and of matters within
the realm relating to war, in cases in which the courts of common law were incompetent to decide. Its proceedings were according to the course of the Roman or civil law. The earl marshal cannot hold this court alone, and there has been no hereditary or permanent high constable since the death of the Duke of Buckingham, 'poor Edward Bohun,' in the time of Henry VIII. In the few cases in which the court of chivalry has been since held, a high constable has been appointed for the occasion. In the case of an appeal of death brought in 1583 against Sir Francis Drury, the Downing, Sir Robert Lee, struck off in parts beyond sea, Queen Elizabeth refused to appoint a high constable; and thus, says Lord Coke, the appeal slept. The minor duties of the earl marshal are set out with great minuteness of detail in a document preserved in the Rolls' 'Gazetteer.'

Besides the earl marshal, there is a knight marshal, or marshal of the king's household. The office of earl marshal, and that of marshal of the King's Bench, as well as that of the knight marshal, is called a marshalsea; but the term is ordinarily applied to the last only.

MARSHALSEA. In the Marshalsea of the king's household there are two courts of record. 1. The original court of the marshalsea is a court of record, to hear and determine all matters between the several tenants of the king's household and others within the verge, that is, within a circle of twelve miles round the king's palace, with a jurisdiction of pleas of trespass, where either party is one of the king's servants.

2. The palace court was erected by letters patent, 6 Chas. ii. 6 for the purpose of giving personal actions to all clerks employed by the knight-marshal. The judges of this court are, the steward of the king's household and knight-marshal, and the master of the court, assisted by a registrar deputed by the knight-marshal. The palace court is held once a week in Scotland Yard, and causes are here brought to trial in four or five court-days, unless they are of sufficient magnitude to induce either party to request a longer period. A great number of cases arise from both courts into the court of king's bench.

MARSHAM, SIR JOHN, born 1602, died 1685. The noble family of Marsham have the honour of tracing themselves to an illustrious ancestor. It was, he was one of the most eminent scholars of his age, as the founder of their hereditary honours. He was one of six sons and four daughters of an alderman of London, and was born in the parish of St. Bartholomew. He had his education in Westminster school, and afterwards attended St. John's College, Oxford. During his university life he travelled much abroad in France, Italy, and Germany, both as a private gentleman and in the suite of Sir Thomas Edmunds, ambassador of France. When he returned home he betook himself to the study of the law, but it does not appear that he attended the sessions of the House of Parliament. He was called to the bar in Chancery, and even this office he lost when the contents arose between the king and the parliament. Nor was this all; for, following the king to Oxford, and remaining attached to the royal cause, he suffered greatly in his estate. He was one of the six clerks of the common pleas, and restored to the court of the city of Rochester, was restored to his six clerks' office, was knighted, and soon after was created a baronet. He died at Bushy Hall near Weyford. Such is the outline of his life. The predominance of a political power to which he was obnoxious, in the period of his life when his mind was at maturity, gave him leisure to pursue those studies for which he had acquired a taste in the earlier period of his life. The subject on which he most peculiarlyDisplayed himself is the law of real property, the problem of the tenure of the soil, and its effects upon the health, prosperity, and industry, and the disentangling the perplexed statements to be found in early writers concerning ancient dynasties and events in the earliest periods of history. The results of these studies he gave to the world in a folio volume, printed at London in 1641, entitled 'Dissertations on the Antiquities of Egypt, Ethiopia, Etruria, Greece, being an enlargement of a work on the same subject published in 1649, entitled by him 'Dissertations Chronologica.' Sir John Marsham has treated the subject in a manner befitting a scholar intent on nothing but the discovery of truth, if truth be attainable. His work was published at Leipsig in 1676, and at Franeker in 1696, with a preface by the editor Menckenius, in which some of his conclusions are questioned. It is probable that the modern discoveries in Egypt may affect in some points the conclusions of this learned scholar.
As 2,000,000 principally covered
in Russia and even common
in some cases the water of the marsh exhaled an intolerable smell of sulphured hydrogen, arising from the decomposition of the sulphate of magnesia or Epsom salt, which is continued for forming on their banks. (Siberia, and the banks of the

In cold countries marshes freeze, but seldom become dry; in warm countries, on the contrary, the marshes are often dry, and such can never form peat. As to the vegetation of these marshes, it is composed of reeds, rushes, alga, graminea, or marshes, of which the most common in the

Marshes are found in all kinds of situations, in continents and in islands (Iceland, Anau, &c.), on the margin of the sea, as well as in the interior of the country; and even on the summits of mountains, as well as in the plains. Most countries have them in greater or less abundance, but it has been remarked that they are less common in northern Europe and eastern Asia, and that they are more abundant in America than elsewhere. In this latter part of the world almost all the plains are wet and abound in marshes; they are exceedingly common in the northern countries of the globe, particularly in the latter part of its leaves, the adobe and the subsoil clay. Here the rain and snow-accumulation, and remain for want of sufficient evaporation to carry them off.

It would be impossible to enumerate all the existing marshes; we may however observe in Italy the Tuscan and the celebrated Pontine marshes, which are of great extent; in France there are about 1,500,000 arpens, or French acres, of marshes, some of great surface, as that of Montoire near the mouth of the Loire, which has been drained and cultivated gives constant employment to 8000 persons. Ireland contains about 3,000,000 acres of marsh; the marsh or bog of Allen alone contains 300,000 acres, and there are others very extensive. England has many marshes, particularly in Lincolnshire, Somersetshire, Kent, and Cam-bishegues Chester, Huntingdonshire, Lancashire, and Stafford have extensive marshes, some of which contain embanked trees. Scotland is much diversified with marshy ground, as in Peeblesshire, Ayrshire, Sterling-hire, Kinross, &c. As for Ireland, it is said to contain 15,000,000 acres of marsh and it still contains some extensive bogs which furnish peat.

All the space along the coast from Holland to Denmark is little better than a succession of marsh and sand. Russia in Europe has marshes of vast extent, as those at the north of its great lakes; and in Italy there are extensive marshes covered with reeds. Hungary the marshes are estimated at 2,000,000 arpens. Switzerland has some considerable swampy patches, many of which here and there contain great lakes and rivers. In Spain and Portugal there are some extensive marshes; indeed they are more or less scattered all over Europe.

Asia has its marshes and swamps, but they are less common than in the west and south, where they are in great number and very extensive, as between the lower Ob and the Yenisei, and between this last river and the Lena. There is between the little Tunguska and the Yenisei the marsh called Lis, equal in extent to the great lakes of America as it were in the midst of Rocky hills. The province of Otkotok has many swampy forests.

A large part of China is naturally swampy, but it is to a great extent drained by the numerous canals which intersect the country. Tonquin has many marshes, and the province of Oudo has some extensive marshes covered with reeds, the retreat of great herds of wild buffaloes. The

mouths of the greater part of the rivers of India are marshy and large swamps are sometimes found along their course, and is the case with the Padde in the northern provinces where there are many swamps, or marshy forest.

In Persia the province of Gilan, in other respects fertile and beautiful, is very renowned on a marsh where it is one of the many

Mozedarra has also many swamps. The eastern coast of the lake Aral is marshy. The steppes of the Kirgish abound in salt marshes and pools. The Asiatic islands, that is, all those that are of any extent, contain marshes: thus part of the coast of Sumatra is marshy, the rivers of which have caused it to receive the name of the 'pestiferous coast;' the reeds are gigantic bamboos, and a continual fog hangs over the aquatic soil. Batavia, Samarang, and other places in the island of Java are reputed to be so vitriolic some of its marshes, that the inhabitants who are only well on the northern but in pestilential marshes, that the island has been named the grave of Europeans. The Philippine Islands have a great many peat bogs. New Holland has much marsh ground along the coast, and immense swamps have been seen land.

As for Africa, its interior is too little known to enable us to speak with any certainty of its marshes; but the southern part, according to Barrow, has many and extensive marshes. The marshes of the rivers on the east are marshy at their embouchures, which is also the case with the Quorra. Madagascar contains marshes, in which the singular Raveaula (urania speciosa), a kind of palm, grows, remarkable for the size and disposition of its leaves. Reeds and marshy ground are similar to some of the banana, and are employed by the natives as table-nets, napkins, plates, dishes, and spoons.

America contains immense marshes. In the frigid zone of the New World, as far as known, fog-enveloped marshes stretch westward, in Russia. America, the land lying between the coast and the mountains is a slip of black swampy soil; some of the marshy grounds are like the slopes of the mountains, and retain the water like a sponge; their verdure (being covered with moss of various colors) is the most agreeable of any in the world; and the traveller sinks up to the waist. On the opposite or east coast of America we find Newfoundland intersected by marshes and morasses. Lower Canada has neither marshes nor stagnant water, but the rivers are muddy. To the south of the great lakes of North America, and as far south as Mexico, the United States contain a great number of marshes, and some of them of great extent. The low lands of Mexico also contain many swamps. The former intention of Vera Cruz is principally occupied with marshes, while the latter part of the country contains a great abundance of extensive marshes, as on the upper Apure, an affluent of the Orinoco; and the delta of the latter river is one vast swamp. The region which extends between the Andes and the Pacific has little marshy ground, except Chacao where there are a great number of extensive marshes; but on the other hand the immense plains which occupy the whole interior of the continent, from the mountains of Caracas on the north to the Straits of Magalhaens to the south, contain a great number of extensive marshes.

All the immense basin of the Amazon is covered with swamps and wet land and marshy forests. To the south of the Campos Parexis, the provinces of Moxos and Chiquitos contain extensive marshes; in the latter particularly there is a marsh of great extent called the Pampa de Moxos (356.) This marsh is temporary however, being dry a great part of the year, and then covered with the cornfla (gladiolus) and other irides. The province of Chaco is also full of marshes, as well as that of Cordova, in the eastern part of the province of La Plata.

In La Plata there is the great marsh of Ybera, formed by the infiltrations of the Paraná. At the north-west extremity of the Pampa de Buenos Ayres is the great sandy marsh of La Canaveralas, and along the whole course of the Rio Mendoza, and below Buenos Ayres, and at the foot of the Cordilleras, there are extensive marshes. They also exist on the upper part of Rio Negro. In short, we may say that all the immense region of the Pampas, or plains of South America, contains marshes. Brazil has many swampy woods; and in ascending the coast we find the great island of Marajo at the embouchure of the Amazons, a considerable tract of which is a marsh, formed in part by

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the deposit from the water of the river, and in part by the sands of the sea. Further north again the whole coast of French Guiana is a swamp.

This enumeration of the known marsupials and swamps, though comprehensive, is however far from being complete. Very large portions of the earth's surface remain still unexplored, and physical geography is yet too modern a science to have attracted the attention of travellers to the correction and completion of its details. Nevertheless it is certain that the extent of marshy ground is very great; and probably it was formed from a greater height, for a multitude of natural circumstances have greatly diminished them, and are still effacing them by degrees. On the other hand colonization, and the consequent increase of population in the newly settled places, cause the clearing of the ground, and the drains of the rains go on rapidly. There is no doubt but that in proportion as the swamps are dried up the source of many diseases will be got rid of; but again, it may be doubtful whether the increased drought occasioned by so vast a reduction of water will not engender in other diseases equally fatal with those now spring from the superabundance of swampy ground; and it is possible that even absolute sterility may result, in some cases, from imprudent drainage.

MARSIGNY, BERNARD DE [Social War.]  
MARSIGLI, LUIGI FERDINANDO, COUNT, born at Bologna, of a noble family, in 1658, studied mathematics under Borelli, and natural history under Malpighi and other able professors. At the age of twenty he went to Constantinople, and returned with his father, who was a native of Braccio del Bosforo Tracio (rome, 1651), which he dedicated to Christina of Sweden; and he also wrote a memoir on the rise and decline of the Ottoman empire, which was not published until after his death. He afterwards served in Hungary, and in the Tatars, was raised to the rank of captain, and was wounded and taken prisoner at the battle of Raab, in 1683. He was sold as a slave, and, after suffering considerable hardships, was ransomed by his family, and was then employed by the Empress as an engineer, to settle the boundary-line of the Austrian dominions on the side of Turkey, agreeably to the treaty of peace between the two empires. When the war of the Spanish succession broke out, Marsigli, who was already a general, was actually selected, and found himself in command of the garrison of Brisch, of which town the Count d'Arco was political governor. Briscach surrendered to the French thirteen days after they had opened the trenches. The aulic council of Vienna highly disapproved of the surrender; and Marsigli was not likely to be recognized. He tried every means to have the sentence revoked, but in vain. He wrote and published a memoir in his defence, which is said to have appeared perfectly satisfactory to competent judges, and among others to the great Voltaire, who, at that time, was devoting himself to study; he travelled in France, was numbered among the members of the Academy of Sciences of Paris, and at last returned to his native town Bologna, to which in 1712 he made a donation of his scientific collections, which was unexpectedly increased by some contributions of a building allotted for the purpose, and called the Institute of Sciences and Arts. In 1726 Marsigli published his great work on the Danube, "Danubius Pannonico-Mysicus, Observationibus Geographicis, Astronomicis, Hydrographiciis, faunisticis, percutenti quodammodo Comite Marsalli, socio R. Societatis Parisinensi, Londinensi, &c." (Amsterdam, 7 vols. folio, with handsome plates). The first volume treats of the geography of Hungary, Serbia, and other countries bordering on the central Danube; the second, on the best monuments in the same; the third, of the geology; the fourth, fifth, and sixth, of the ichthiology, zoology, and ornithology; and the last contains a catalogue of the plants, and treatise of the nature and properties of the waters of the Danube and its great affluent the Dniester.

MARSTON, JOHN, a dramatist in the reigns of Elizabeth and James I., the particular of whose life, and even the exact times of whose birth and death, are, like those of many of his contemporaries, very uncertain. On the text of some of his works seems to be in the Corpus Christi College, Oxford. At one time he appears to have been intimate with Ben Jonson, if we may judge from his dedication to that poet of the "Malecontent"; but from the epistle to the reader prefixed to his "Sophonisba," it seems that a friendship subsequently ensued, as that epistle contains several strictures on Jonson for his use of passages from classical authors in his tragedies of "Sémiramis" and "Catinel."

Marston left several plays, of which the following have been printed separately:—"Antonio and Mellida," "Ammio's Revenge," "Dutch Courtezan," "Innata Courtesan," "Malecontent," "Parasiftarter," "Sophonisba," "Tamerlane the Great," and "What you will." Of these the "Malecontent," and indeed the whole of Marston, is execllent in comedy, and, with the most forcible poetic expressions, is praised in a Dodsley's Collection. It appears however from the title-page of the first edition (1654) that this play was written by Webster, and only altered by Marston. He also left several poems, published and anthated by Mr. Bowle in 1764; and he assisted Ben Jonson and Chapman in the composition of "Eastward Hoe," a play which is in Dodsley's Collection.

MARSUI_PATIA [Swed.]  
MARSUPIALIA, MARSUPIATA (Marmosa, a purse or bag), an extensive group of Mammalia, differing essentially from all the other in their organization and comprehending genera fed by every variety of nourishment. Their structure is, as a necessary consequence, modified accordingly; and we find among them an adaptation of the organs of progression, prehension, and digestion to several wants and habits, so that we may trace in the analogies to the carnivorous, insectivorous, herbivorous, and omnivorous forms of the other mammiferous quadrupeds.

The first and largest of these suborders is the marsupial group brought under the notice of zoologists were those of America, and they received from Sculiger the appellation of *Anima Alruna, or Mammalia. The peculiarity in these Marsupials is, so to speak, the presence of an organ again of their young, which are born in a state of development not much beyond that of the fetus in the other groups, at a very early stage of pregnancy, and attach themselves by the mouth to the teat, and are nourished in the marsupium, or pouch, of the mother; and in this manner one or two young are born, the second uterus, the almost embryotic young one is nourished till the little knobs that mark the place of the extremities shoot out into limbs, and till the whole frame-work of the animal is formed, it is able to go alone. Long after this period it dies to the pouch by the approach of Paxier, or enters it when fatigued, and may often be seen peeping out to ascertain whether it is safe to venture abroad again.

Marsupius, who appears only to have known the American species, or Oposumus, arranges them under the generic appellation of Didophilus,* in his order Foxes, placing them between the Bears, Badgers, and Racoon, &c. (Crans, and the Moles (Tulip).)

This advantage of knowing the great quantity of species and variety of forms discovered in New Holland, arranged the copious materials which that extraordinary country afforded in addition to the few American forms, as the fourth order of his Mammiferous, dividing the numerous group into several subclasses, the first being the Monadophiles, and the second the Didophilus, which last consists of the Marsupiali and Monotremata, properly so called: we may properly so called, because, strictly speaking, every Marsupial female is a Monotremata in the Mammifera.

Mr. Gray collects all the forms under the family Didophides. The subfamilies into which this group is separated by him will be found in the article MAMMALIA, where the views of zoologists in general, as to the classification of these animals, are considered.

Storr cceggregates all mammals with opposable thumbs into one great group, which he divides into three sections the first consisting of the genus Homo; the second of the genera Sima, Prostomia, Proboes, Tarsius, and Lemmu; and the third in a study of the Marsupialia. Mr. Ogilvy separates his Chiroptera (Mammalia with opposable thumbs) into the three groups, Bruma, Quo-ramma, and Pedisma, which last are characterized as Har.
ing opposite thumbs on the hind hands only. The Pedun-
mana consist of the families Simiidae (with anthropoid
teeth) and the Dendropithecidae (with edentate;
and the latter consisting of the genera Phalangista, 
Phalangista, and Pe-
tarsus, Didelphys, Cheirogaleus, Dusyurus, and Phaco
cale. (Nat. Hist. of Monkeys, Opossums, and Lemurs,' Menogra-
phies, vol. iii., 1838.)

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Professor Owen, it will be advisable to draw the attention of
our readers to the Marsupial

**Organization.**

**Skeleton.**—The Marsupialia differ considerably from each
other in the osseous part of their structure, as might be
expected in a group whose food and habits vary so much.
Our limits do not permit of a detailed inquiry into these
differences; but the examples given in the skeletons, skulls,
and teeth, for Professor Owen's article will convey a general
notion of the formation of the bony parts, and the modifica-
tions to which they are subject. There is however one
peculiarity common to all, which is even found in the true
Monotremes, and presents a marked discrepancy from the
osseous systems of the other Mammalia; we it has been
Marsupial bones. These are attached to the pubis, and
embbed in the muscles of the abdomen, where they afford
support to the marsupium, or pouch, in the females. They
exist also in the males, to whom their presence seems to be
necessary. The marsupium, has been regarded as a pecuni-
ary situation, and their shonion are shown in the skeletons of the
Kangaroo and Opossum. The principal modifications in the
general form of the skull and in the other parts of the ske-
eton are well pointed out by Professor Owen, in his paper
'On the Osteology of the Marsupialia.' (Trans. Proc., Oct.,
1838.)

**Organs of Digestion.**—These, as might also be expected,
very greatly. The teeth are appropriated to the food or
proy to be taken, whether it be flesh, insects, fruits, herbs,
or roots; and in conformity with the marsupial economy, we have
simple or a complex stomach, and a corresponding structure in
the viscera; the flesh-eating tribes being entirely with-
out a cecum, and the others possessing that appendage in a
greater or less degree according to circumstances.

The marsupial organ of generation and mode of reproduction that the great
and striking difference exists between the Marsupialia and all
other known Mammals. Tyson first distinguished the true
va
gina from the urethral opening; both phalologists, though he denominated it
the common passage or canalis; nor was his conjecture as
to the parts of the complicated uterine apparatus wherein
the genera is carried on other than true. John Hunter, Sir
Edmund Balfour, and Mr. Morgan have all thrown more or less light upon
this obscure subject; and the paper of Mr. Morgan, in the
Transactions of the Linnean Society,' vol. xvi., is espe-
cially worthy of attention, as far as it goes. But it was
reserved for Professor Owen, in his article 'On the Gen-
eration of the Marsupial Animals, with a Description of the Impreg-
nated Uterus of the Kangaroo' (Phil. Trans., 1834), that observes that
in all the genera of this group the uterus is double, and the true
uterus and the uterine tubes, are two separate canals, and
end in two lateral canals. Both the digestive and generative tubes terminate within a common cloacal outlet,
and the term Monotremata therefore, he remarks, though
confined to the edentate Marsupialia, is so far applicable to the
other marsupials, as it signifies the entrance of the
Ovary or Vertebrata in their separate genital tubes, so
also the males resemble them in the peculiar structure and
connexion of the intramural organ; and he points
out that in the Macropus, the Dasyurus, and the Phalangista,
the corpora cavernosa penis have the same position below
the pubis, with the same lack of ligamentous attachment
to the bony pelvis; and the glans has the same bifurcated
form and double groove for the transmission of the semen
as in the Opossum, in which these peculiarities in the male
organs were first described by Cowper ('Phil. Trans., 1704).

"In those genera," continues Mr. Owen, "in which the
females have an inward fold of integument, or abdominal
pouch, the males have an outward duplication in the cor-
responding structure, which is the seminal vesicles, and
are thus placed anterior to the penis; and it is a remark-
able fact that the muscle which surrounds the mammary
gland in the one sex is analogous to the suspensory cemen-
ter of the testes in the other. Both sexes in the Marsupial
are thus placed in a peculiar position, each being limited
in possessing two superior venae cavae, and in the want of
the inferior mesenteric artery; and the marsupial bones, so
common in the skeletons of reptiles, are limited in the
mammiferous class to this division, in which alone, from
the peculiarly brief period of uterine gestation, and the
consequent non-enlargement of the abdomen, their presence
might be expected. But these bones serve important pur-
poses in relation to the generative economy of the Mar-
supialia. In the female they assist in producing a comprai-
son of the mammary gland necessary for the alimentation
of a peculiarly feeble offspring, and they defend the abdomi-
nal viscera from the pressure of the young as this in-
crease in size during their mammary or marsupial existence,
and still more when they return to the pouch for temporary
housing. In the males, with the exception of the edentate
genera, the marsupial bones, from their relation to the
cremaster muscles, which wind round them like pulleys,
assist in the compression and retraction of the testes during
copulation; a process which, from the peculiar position of the
male to their secretion as they have in the female to the
mammary glands. The minute size of the young of the
American Opossum when found in the marsupium, their
peculiar attachment to the nipples, and perhaps the mode
of development by which the young are born alive, all
led to the earlier observers to a supposition that they were
originally formed from those parts; and the gemmiparous
theory, which has subsequently often been revived, appears to
have better proved at the time when Tyson first devoted
his attention to the subject.

Professor Owen, after concluding, from data stated in
his paper, that it may be concluded that the ovulum in the
Kangaroo quits the ovisac in a condition corresponding to
the generative system of the Vertebrata; and, increases in a similar
manner as it descends through the uterus and in a short
minute and most interesting detail the fuctus and mem-
branes of a Kangaroo (Macropus major) at apparently
the middle period of gestation, when in that animal continues
for thirty-eight days. The membranes consisted of an
amnios, a very large vellous villous membrane, and
the ramifications of omphalo-mesenteric vessels, and a thin
un-
vascular chorion. There was no placenta, nor any adhesion
between the external membrane of the fuctus and the in-
ternal surface of the mucous membrane of the testes and interlace-
ment of villi, or vesicles, as in those Mammals in which the
placenta is replaced by a uniform villous and vascular chori-
ion; the condition of the fuctus was such as occurs in the
viper and other oviparous reptiles, except that there
was a minute expulsion of fluid, the fuctus and membranes of the
fuctus was not performed by the extension of vascular fila-

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ments from the sides of the neck, an allantois or caecal process, organised by umbilical or hypogastric vessels, is produced from the terminal portion of the intestinal tube. In the placental Mammalia, where the vitelline sac and vitellus are relatively smaller, the allantois makes its appearance much earlier, but is developed in a different manner and in different orders. It is subsequent in all the placental Mammalia to the important function of the transfer of the hypogastric or umbilical arteries to the exterior enclosing membrane or chorion; and in these Mammalia, Mr. Owen says that the posterior extremity of the chorion was furthered by the amnion and amniotic cavity, in which the chorion formed with the allantoic caseous seek a more intimate contact with the vascular surface of the womb, and proceed to organise the chorion shooting out into villi, either extended over the whole surface, as in the marsupial and other placentas, or limited to one place and forming a single placenta, as in the human subject, and in all unguiculate mammals.

As connected with this subject Mr. Owen subsequently exhibited a preparation (of which a cut is given in London's " Magazine of a Medical and Physical Transactions") to the Zoological Society of London, and took occasion to observe that in the bird and reptile the umbilical vessels are limited to the allantois, and do not extend beyond that membrane to the chorio-allantoic, as in the reptile fore part of the respiration of the foetus. In the placental mammalia, on the other hand, its office as a temporary respiratory organ is secondary, but it is essential as a means of transference of the umbilical vessels to the chorion; it has therefore a preparation of it and without the placenta, as the allantois or umbilical bladder, and urachus, as its remains are termed. The existence of a placenta, in Mr. Owen's mind, therefore infers the pre-existence of an allantois, but the reverse of the proposition does not hold good. In the placental allantois itself performs the functions of the placenta or vascular chorion; and the question to be resolved relatively to the Kangaroo and other Marsupials was whether, the allantois being developed, it was or was not the chorion. The observations on the Kangaroo were made with no more than an accidental belief that the allantoic vesicle had been observed in this subject. The whole length from the nose to the end of the tail, when stretched out, did not exceed one inch and two lines. On the 9th of October I again examined the pouch: the young one was evidently grown and respired vigorously. I determined to wait till he was more advanced in development, but immediately, without further delay, to observe the actions of the mother to effect the same purpose, which one might presume would be instinctively analogous to those by means of which the fetus was originally applied to the womb. When related to this point, I remind you that the Hunterian dissection exhibited in the preparations in the museum of the college, and the observations of Mr. Morgan and Mr. Collie, concurred in disproving the theory of a vascular mode of connection between the mammalian foetus and placenta; and the subject was better elucidated by the communication that the constant blood had been stated by Geoffroy St. Hilaire to accompany marsupial birth, or the spontaneous detachment of the fetus from the nipple, and even the anastomoses and communication of the continuous vessels in the neck of the fetus had been observed, which became desirable to have occurred demonstration of the facts.

The fetus retained a firm hold of the nipple; when it was detached, a minute drop of whitish fluid, a serous milk, appeared on the point of the nipple. About half a line of the extremity of the nipple last entered vagina, which extremity was of smaller diameter than the rest of the nipple, not being as yet compressed by the contracted orifice of the mouth as to form a clavate extremity, such as it afterwards presents. The young one moved its extremities and exhibited signs of its being alive. In a moment it had no visible connexion with the placenta, and was equally free from attachment to the peristie of the uterus, in which the fetus was developed.

The period of gestation (thirty-nine days) was determined in this, in the vavimun of the Zoological Society of London, by Mr. Owen, whose account of this hitherto obscure and most interesting portion of the natural history of the animal we here give from his paper in the "Phil. Trans."

In order to illustrate the points when they should become indisputable, they were commenced six days after the copulation, which took place on the 27th of August, and were repeated every morning and evening until the 5th of October, when, at 7 A.M., the fetus was discovered in the pouch attached to the left superior nipple. On the preceding day at the same hour a great quantity of the moist brown secretion peculiar to the pouch was noticed, indicating a commencing determination of blood to that part, and at different periods during the day the female was observed to put her head into the pouch and lick off the secretion. When she was again examined, at six o'clock in the evening, a slight increase of the secretion was the only perceptible change in the state of the pouch; but when I made another examination the next day, the secretion first began to appear, and the nipple that had been in use to diminish. As parturition took place in the night, the mode of transmission to the pouch was not observed. No blood or albuminous discharge could be detected on the 11th of October, Mr. Owen presented a subject orifice of the pouch; but these might have been removed by the mother. The appearances presented by the little one thus detected within twelve hours after being deposited in the pouch were as follows.—It resembled an earth-worm with a saccular formation; a single opening was observed at the anterior extremity, which was not noticed till after the death of the young Kangaroo of the previous year, when I watched the secretion first appearing in the pouch. The secretion first began to appear, and the nipple that had been in use to diminish. As parturition took place in the night, the mode of transmission to the pouch was not observed. No blood or albuminous discharge could be detected on the 11th of October.
they were invariably employed to widen the orifice. When she withdrew her head, she generally concluded by licking the orifice of the pouch and swallowing the secretion. After repeating the above act about a dozen times, she lay down, and seemed to be at ease.

Muscular power was testified by its efforts in sucking, during which it put every part of its body in motion. According to the testimony of the person, who preserved the mother with this little one for me, the latter by no means passes the whole of its time with the teat; papilla in its mouth, but has been remarked, more than once, without having hold of it. It has even been wholly removed from the sac to the person's hand, and has always attached itself anew to the sac. Yesterday, on again looking at it, I gently pressed, with the tip of my finger, the head of the little one away from the little nipple of the suck. It held, and continued pressing a little more strongly for the space of a minute altogether, when the test, that had been stretched to more than an inch, came out of the young one's mouth, and showed a small circular projection against the wall, well adapting it for being retained by the little opening of the mouth of the sucker. The opening of the mouth seemed closed iron both sides, and only sufficiently open in front to admit the slender papilla. After this, the extremity of the little one was a close to being nearly in this respect to the new-born young of the rat, yet Mr. Owen observes, it is evidently inferior to the latter.

For, though enabled by the muscular power of its lips to grasp and adhere firmly to the nipple, its own unaided efforts seem incapable of drawing sustenance therefrom. The forelimbs and head are analogous to the cremenator, to the mammary gland, for the purpose of injecting the milk from the nipple into the mouth of the adherent foetus, has been demonstrated by Professor Geoffroy and Mr. Morgan; and Mr. Owen remarks that in the kangaroo, during the period of separation, the efforts of suction should always be coincident with the maternal act of injection. If at any time this should not be the case, the consequences might be fatal from the forcible injection of milk into the larynx. To guard against this there is a special contract, from the sacrum, and Mr. Geoffroy observes, it is evidently inferior to the latter.

Thus aided and protected by modifications of structure, continues Professor Owen, both in the system of the mother and in its own, designed to prevent suction from each other's peculiar condition, and affording the most irrefragable evidence of creative foresight, the feeble offspring continues to increase from sustenance exclusively.

Mr. Collie's letter, which is addressed to Mr. Vigors, is dated 26th January, 1836.

* N.B.—Mr. Owen observes that this argument is not applicable to those Marsupials which, like Peramelus and the smaller South American opposums, have the duplicatures of integument forming the pouch extended close to the cloaca.

Outline of the Kangaroo about twelve hours after terinate birth, showing its natural size and external development at this period. The elongation of the jaws has rendered the mouth to a simple rounded anterior orifice, which subsequently becomes more even contracted before the lateral features begin to extend backwards. The eye is concealed by the completely formed eyelids. Three divisions are now seen at the posterior extremity. A longitudinal line indicates the separation of the umbilical pedicle. 4, the upper nipple of the left side, to which the above foetus was attached; 6, the lower nipple of the same side.

The freedom with which the mother reached with her mouth the orifices both of the genital passage and pouch suggested at once to the writer the idea of trying whether a young one from the one to the other; while at the same time her employment of the fore-paws indicated that their assistance in the transmission of the foetus need not extend beyond the keeping open the entrance of the pouch while the foetus was seized by the pedicle when it thus probably conducted to, and held over, a nipple, until the mother feels that it has grasped the sensitive extremity of the part from which the fat is to derive its sustenance. This mode of transmission is consistent with analogy, the mouth being always on point as the ordinary finger; and, as dogs, cats, and mice, for the purpose of removing their helpless offspring. It accords also with the phenomena ether better than those which have been previously proposed; for it is now ascertained, by repeated dissections both of the Kangaroo and in several species of the opposums, that the perineal orifice is connected to the uterus by the marsupium; and if the genital outlet can be brought into contact with the orifice of the pouch in the dead Kangaroo by means of stretching the relaxed parts, yet such an action has never been witnessed in the living animal; the tender embryo would be more liable to receive injury from the fore-paws; and these, from the absence of a thumb, could not so effectually assure its passage as the lips, which can be opposed to each other. Lastly, the young one did not by any of its actions encourage the idea of its being the result of instinctively creeping up to the nipple. When the female had rested quiet for about half an hour, we again examined her, and found the young one not at the bottom of the pouch, but within two inches of the nipple; it was breathing strongly, and moved its extremities irregularly as before. I made an attempt to replace it on the nipple, but without success, and the mother was then released. On an examination two days afterwards the marsupium was found empty. Every portion of the litter was carefully searched for. In the hope of finding the foetus, but without success. The mother therefore, owing to the disturbance of the young one, had probably destroyed it. This was a result I had not expected, for the head keeper at the Zoological Park, who has twice made a most careful search for the little Kangaroo, had soon after it had been deposited there, and when it did not exceed an inch in length, and it had each time again become attached to the nipple. I afterwards saw this foetus attached to the nipple, and it continued to grow, without having sustained any apparent injury; and it attached itself until the death of the mother, when it was nearly ready to leave the pouch. A similar result occurred to Mr. Collie.

The young one observed by Mr. Collie (see Zoological Journal, vol. xiii. p. 230) was of nearly the size of the last and being the only one lived, it was preserved; and the coloured integuments were so transparent as to permit the higher coloured vessels and viscera to be seen through them. The extremities seemed completely formed, and its
derived from the mother for a period of about eight months. The young Kangaroo may then be seen frequently to protrude its head from the mouth of the pouch, and to crop the grass at the same time that the mother is browsing. Having thus acquired additional strength, it quits the pouch, and hops at first with a feeble and vacillating gait, but continues to return to the pouch for occasional shelter and supplies of food till it has attained the weight of ten pounds. After this it will occasionally insert its head for the purpose of suckling, notwithstanding another fetus may have been deposited in the pouch, for the latter, as we have seen, attaches itself to a different nipple from the one which had been previously in use.

1. The head of a mammae fetus of a Kangaroo, about eight weeks old, dissected to show the relation of the larynx to the tongue and posterior nerves; the trigonoid, drawn down out of the aperture in the soft palate; is the cavity in the tongue for the reception of the nipple. 2. The elongated nipple, with which the young Kangaroo licks the mother's mouth; the dentate line of the cusp to which it is grasped; it never extends into the osophagus or stomach, as has been conjectured. (Owen.)

For the observations made by Professor Owen on the structure of the female generative organs in the other Marsupials, as compared with those of Ovivorous, Ovoviviparous, and Viviparous animals, we must refer to his paper above quoted, our space not permitting us to do more than call the reader's attention to the fact that his inductions rest principally on the examination of those organs in Didelphys doraserga, Petaurus pygmaeus, Petaurus Teguanoides, Diprotodon scatrus, Didelphys Virginiana, Hypsiprymnus Whitei, and Macropus major. His remarks on the inferiority of the cerebral development of the Marsupials will be read with great interest as bearing on the structure and analogies of those organs, and other points of resemblance to the lower vertebrate classes, especially to the reptiles. Those marsupial quadrupeds which I have had an opportunity of observing alive in the Zoological Gardens, says the professor, and there are at present (1834) species of Dasyurus, Didelphys, Phalangista, Petaurus, Hypsiprymnus, Macropus, and Phascolomyidae), are all characterised by a low degree of intelligence; nor can I learn that they ever manifest any sign of recognition of their keepers or feeders. Another character, no less uniformly belonging to them, is the want of a power of uttering vocalised sounds. When irritated they emit a wheezing or snorting sound; that of the Dasyurus urinus is the clearest approach to a growl. Mr. Harris states that in addition to this noise, the Yurmee utters a kind of hollow barking. The Thyacurus phaius, or large Dog-faced Opossum, is observed to give a short guttural cry, and appears exceedingly stupid, having, like the owl, an almost constant with the nictitating membrane of the eye. The when irritated, emits a loud hiss, which forcibly one of that of the serpent. The noise emitted by the Kangaroo under similar circumstances is equally removed from a vocalised sound; the necessary apparatus for producing which, Cuvier long ago observed to be wanting in the larynx of this animal. It is interesting to find these analogies to the Reptilia, and more might be pointed out if it were not a comparison which merits a separate consideration. The reader who would pursue his inquiries to the generative system of the Marsupials may also consult the previous writings of Daubenton, Reneger, and Leckart. The museum of the Royal College of Surgeons will afford ample materials for following out the organization of the extraordinary group in the skeletons and preparations preserved in the Physiological Series of that noble institution. The following is the arrangement, based on the organisation of the animals, proposed by Professor Owen in a paper read to the Zoological Society of London on the 4th and 2nd of January, 1839.

### Classification of the Marsupialia

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<td>Dasyurida</td>
<td>[Thylacinus. Phascolomysia]</td>
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<td></td>
<td>Extinct transversal forms</td>
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<td>fossil</td>
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<td>Ambulatoria</td>
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<td>Saltatoria</td>
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<td>Scatosa</td>
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<td>[Cricetina. Petaurus]</td>
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<td>Macropodida</td>
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<td>Phascolomysia</td>
<td>[Phascolomysia. Diprotodon]</td>
<td>fossil</td>
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*The terms given to the tribes or primary groups of Marsupials in the classification are not to be understood as strictly denoting the rank of the species severally included therein, but only their general tendency to select for their support the substances implied by those designations.*
We now proceed to give a succinct illustration of the genera and some of the subgenera above mentioned.

**Thylacinus.** (Temminck.)

*Generic Character.* — Dental Formula: — Incisors \( \frac{8}{6} \), Canines \( 1-1 \), Molars \( 7-7 \). The incisors are ranged in a semicircle, equal, and separated in the middle in each jaw by a vacant space; the external incisor on each side is the stoutest; the canines are of considerable size, curved and pointed like those of the Cats and Dogs; the last molars are armed with three obtuse tubercules, resembling those of the two groups of Carnivora last mentioned. Toes fire on each fore-foot, and four on each hind-foot.

Example, *Thylacinus cynocephalus* (Dasyurus cynocephalus) of Geoffroy, Thylacinus Harrisii of Temminck.

*Description.* — Size of a young wolf; the short smooth hair of a dusky yellowish-brown above, barred or zebraed on the lower part of the back and rump with about sixteen jet-black transverse stripes, broadest on the back and gradually tapering downwards, two of which extend a considerable way down the thighs. The ground-colour on the back inclines to blackish gray. Tail much compressed and tapering to a point.

*Habits and Locality.* — Mr. Harris, from whose paper in 'Linn. Trans.' our description and figure are taken, states that this species, the largest of the Australian Carnivora, inhabits amongst caverns and rocks in the deep and almost impenetrable glens in the neighbourhood of the highest mountainous parts of Van Diemen's Land, where it probably preys upon the brush (bush?) Kangaroo and various small animals that abound in those places. The individual from which the description and drawing were taken was caught in a trap baited with Kangaroo-flesh. It remained alive but a few hours, and during that period uttered the cry and presented the appearances quoted by Mr. Owen. In its stomach were found the partly-digested remains of a Porcupine Ant-Eater (*Echidna aculeata*). The vulgar names for this species are, the Zebra Coosum, Zebra Wolf, &c.

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**Dasyurus.** (Geoffroy.)

*Generic Character.* — Head conical, very much pointed; gap very wide; ears moderate. Toes five on the fore-feet; on the hind-feet the great toe is reduced to a tubercle or is entirely absent.

*Dental Formula:* — Incisors \( \frac{8}{6} \), Canines \( 1-1 \), Molars \( 6-6 \) = 42.

Example, *Dasyurus urinus* (Didelphis urina of Harris).

*Description.* — Head, body, legs, and upper part of the tail covered with long, coarse, black hair, irregularly marked with one or two blotches of white; in some specimens on the shoulders, in others on the throat or rump. Tail slightly prehensile, its under part bare. (Harris.)
A male and female, which I kept for a couple of months chained together in an empty cask, were continually fighting; their quarrels began as soon as it was dark (as they slept all day), and continued throughout the night almost without intermission, accompanied with a kind of hollow barking, not unlike a dog, and sometimes a sudden kind of anorton, as if the breath was retained a considerable time, and then suddenly expelled. The female generally conquered. They frequently sat on their hind parts, and used their fore-paws to convey food to their mouths. The muscles of their jaws were very strong, as they cracked the largest bones with ease asunder; and many of their actions, as well as their gait, strikingly resembled those of the bear. Its vulgar name is the Native Devil.

The specimen in the garden of the Zoological Society was a snarling surly animal.

Mr. Owen's account of the dissection of a Dasyurus macrurus, or Long-tailed Dasyurus (Spotted Martin of Phillip's Voyage), will be found in the 'Zoological Proceedings' for 1835.

Phascologale. (Temminck.)

Generic Character.—Differing from Dasyurus, especially in its dental formula:

\[
\text{Incisors} \quad \frac{4}{6} \quad \text{Canines} \quad \frac{1-1}{1} \quad \text{Molars} \quad 2-7 = 46.
\]

Example, Phascologale penicillata (Didelphis penicillata) of Shaw, Dasyurus penicillatus of Geoffroy. Size rather larger than that of the Brown Rat (Mus decumanus). Tail very bushy. Fur uniform, ash-colour, whitish beneath, short, woolly, and very thick.

Habits and Localities.—This Phascologale lives on trees in New Holland.

Phascologale penicillata.

Myrmecobius. (Waterhouse.)

Generic Character.—Fore-feet with 5 toes; hind-feet with 4 toes, all free. Head elongated, snout produced; ears moderate, narrower, and subacute at the apex. Body slender. Tail moderate.

Dental Formula:—Incisors \(\frac{8}{6}\); Canines \(\frac{1-1}{1}\); Pseudo-molars \(3-3\); Molars \(5-5\); \(6-6\) = 52.

Example, Myrmecobius fasciatus. (Waterhouse.)

Mr. Waterhouse observes, that although in the structure of the skull M. fasciatus evinces an affinity to Phascologale, it differs from that genus in the want of a thumb to the hind-feet, and in the strength and larger size of the claws of the fore-feet, which are shaped somewhat like those in the genus Herpestes, and are evidently suited to burrowing. The fore-legs are also stouter in proportion, and the toes are stronger. In their narrow and pointed shape, the ears, the marks, resemble those of Perameles nasiius, and differ from those of Phascologale; they also differ in being tolerably well clothed with hairs. Mr. Waterhouse imagines that in the present animal he can perceive a slight approach to the Edentata Marsupialia, or Monotremes, and be thinks that analogically it may be compared to the genus Tepesi among the true Insectivora, bearing a somewhat same connection with Echidna and Ornithorhynchus to that which exists between the last-mentioned genus and the genera Erinaceus and Mygale. In conclusion he adds that it must be allowed that there is a greater dissimilarity in structure between the last-mentioned genus and the genera Myrme-
cobius and the Monotremes, than between Tepesi and Mygale; we are however prepared for this, by the comparatively sudden transitions from one form to another which we find in the Marsupialia, which group, it must be borne in mind, stands low in the grade of organisation among the Mammalia. (Zool. Trans., vol. ii.)
Charopus. (Ogilby.)

On the 13th March, 1838, Mr. Ogilby, by that officer on the banks of the river Murray, in the interior of New South Wales, stated his original belief that the animal belonged to the genus Perameles, under which name he had proposed to term it Per. ecaudatus, and induced Mr. Ogilby to suspect that the specimen exhibited in the present occasion, had considerably shaken the opinion of the latter, and led him to reconsider the matter. Mr. Ogilby then stated the time of examining the specimen, it would be seen that there were only two toes on the fore-feet, ascribed to having been so perfectly similar to those of the animal the name of Bandicoot, among the persons of the party, the drawing of the foot, in fact, very closely resembles the legs of the genus Sus, in form and characters. It was observable, short, and of equal length, with a slight swelling at the base of the first phalanges, while the other metatarsal bones were much longer and more slender. The form of the hind-foot was perfectly similar to that of the fore-foot, as also the teeth, as far as could be seen from the drawing, except that the canines did not surpass the anterior molars in point of size. The long, elliptical, and nearly naked; the head and the ears, and very much attenuated towards the body about the size of a small rabbit, a much of the same quality and colour as in Mr. Ogilby, after expressing his confidence in the opinion of Mr. Thomas Mitchell's drawings, and that gentleman assured him he had procured for it the provisional name of Charopus, in accordance with the description of the fore-feet.

The following is the notice of this animal made by Sir Thomas Mitchell, in his journal, on the occasion of the meeting of the Zoological Society of London, on the 13th March, 1838. The most remarkable event of this day's journey was the discovery of a fossil snail which had been found in a fossil stone cave of Wellington Valley, where, in the form of a bottle, I supposed it to belong to some species of a wide bottle; but in the living animal the form was still more remarkable. The feet, and the fore-feet, were also singularly formed, the latter were those of a pig; and the marsupial opening was and not upwards, as in the Kangaroo and the class of animals. This quadruped was discovered on the ground; but on being chased in a hollow tree, from which they took it alive, it was declared they had never before seen a animal of this kind. This was where the party had collected the left bank of the Murray, immediately after the river. Such, Mr. Ogilby remarked, was the information possessed at present with regular animals; but Mr. Gould had promised to send his original specimen on his arrival at Sydney, of which town it had been deposited; and Mr. Ogilby hoped that, through the kindness of the party, he should shortly have it in his power to make a more detailed description of its form and characters. (Zool. Proc. 1838.)

Dental Formula:—

\[
\begin{align*}
\text{Jaw} & \\
\text{Upper} & \{4\text{incisors}, 4\text{spurious molars}, \} \\
\text{Lower} & \{13\text{incisors}, 4\text{spurious molars}, \}
\end{align*}
\]

* The anterior of these might be termed canines.
Didelph. (Linn.)

Generic Character.—Head very much pointed, gape wide, tongue rough with horny papillae; ears large and naked; eyes small; tail long and tapering, flexible, and prehensile, with hair at the base only, the remaining part being covered with scales. Fore-feet with five toes, all armed with strong, sharp, curved claws; thumb of the hind-foot opposable and destitute of nail or claw, the other toes or fingers armed with claws like those of the fore-foot.

Example, Didelph. Virginiana.

Description.—Size that of a domestic cat. Colour dull white. Hair of two kinds; that which is lowest, a long fine woolly down, white at the base, brownish at the tip, through this pass the long hairs of a pure white on the head, neck, and upper parts of the body; the hair is short and close. Round each eye a brownish circle. Ears generally black at the base and yellowish at the tip. Whiskers long, partly white, partly reddish. Extremity of the nose flesh-coloured, with a tinge of yellow. Legs deep chestnut brown. Tail not so long as the body, covered at the base by long hairs, but only scantily furnished with bristles, which come out from between the whitish scales that protect it, for the greater part of its length.

Habits and locality.—The Virginian Opossum is an arboreal animal, as might be expected from the structure of its posterior feet or hands especially. It appears to be to a certain degree carnivorous, for it preys upon insects and birds, and feeds also on fruits; but there is reason for believing that animal food forms its principal support, for it sometimes invades the farm-yards in its neighbourhood. According to Barton, the period of uterine gestation in this species is twenty-six days. It inhabits North America, and was, perhaps, is, very abundant in the North of Mexico, and nearly throughout the United States, where it is called the opossum. In the Perfect Description of Virginia (1649), we find, in the catalogue of animals, 'Possum.'

This beast hath a baggie under her belly, into which she takes her young ones, if at any time affrighted, and carries them away.' Lawton says, 'The Possum is found nowhere in America. She is the wonder of all the land amongst being the size of a badger and near that marks. The female doubtless breeds her young at her teats. I have seen them stick fast thereto, when they have been no bigger than a small raspberry, and seemingly insensible. She has a paunch or false belly, wherein she carries her young. If they are from those teats, till they can shift for themselves. Their food is roots, poultry, or wild fruits. They have no hair on their tails, but a sort of a scale, or holo crust, as the beavers have. If a cat has nine lives, the creature surely has nineteen; for if you break every bone in their skin, and mash their skull, leaving them for dead, you may come an hour after, and they will be gone away, or perhaps you may meet them creeping away. They are a very stupid creature, utterly neglecting their own. They are most like rats of anything. I have, for some time in the wilderness, eaten of them. Their flesh is very white, and well tasted; but their ugly tails put me out of count with that fare. They climb trees as the raccoons do. Their fur is not esteemed nor used, save that the Indians spin it into girdles and garters. The tail appears to be not take of use as an organ of prehension to the adult animal: for it is stated that the little ones when advanced in growth sit upon their mother's back if they are frightened, and, raising their tails round them, escape with her assistance the threatened danger. In captivity the animal is timid, snarling, and stupid.

In the British Museum there is a stuffed specimen of Didelphus virginiana beautifully prepared, with the young in this position.
Didelphys Virginiana (Virginian Opossum).

The French name Sarigue for the species of this genus is evidently a form of Carigueya, the Brazilian name for the genus. They are known in Paraguay under the name of Micour, in the American Islands under that of Manticou, and in Mexico by the appellation of Tiaquazin.

Cheironectes. (Illiger.)

Generic Character.—The complete dental formula of this subgenus does not appear to be known. The number of incisors is stated at ten above and eight below. Head rather pointed; ears naked, rounded; tail scaly, prehensile; an opposable thumb on the hind feet or hands, and the toes webbed.

Example, Cheironectes palmatus (Cheironectes Yapock of Desmarest; Didelphis palmata of authors).

Description.—Fur brown above, with three transverse bright grey bands, interrupted in the middle; white below. Size larger than that of the brown rat.

Habits and Locality.—The river Yapock, or Oyapock (the boundary that separates the French Settlements from Brazil), in Guyana, is the place where this species has been found. It swims with facility; indeed Buffon describes it under the name of Petite loutre de la Guyane.

Cheironectes palmatus.

Phalangista. (Cuvier.)

Generic Character.—Head rather short; ears hairy; fur woolly and short; no extensible membrane between the anterior and posterior limbs; tail long, prehensile, sometimes without hair on its extremity.

Subgenus Phalangista, properly so called—Balantia (Illiger).

Tail prehensile, but covered with hair; ears long and erect.
tawny buff colour, deepest on the throat, where the bottom of the hairs are rust colour; the tail is of the colour of the back for about one quarter of its length, from thence to the end black: the toes on the fore-feet are five in number, the inner one placed high up: on the hind-feet four toes only; with a thumb, consisting of two joints, without a claw, placed high up at the base of the inner toe: the whole foot serving the purpose of a hand, as observable in many of the Opossum genus. The legs are much shorter in proportion than those of the common fox; the ears about one inch and a half in length. It is the Phalanger Renard of the French, Bruno of Vieq-d'Azur, and Whatapuru of the natives.

Locality.—New Holland; neighbourhood of Port Jackson.

Subgenus Cuscus. (Laçcépide.)

Tail prehensile, but in great part naked and covered with rugosities; ears very short.

Dental Formula:—Incisors \( \frac{6}{6} \); canines 0; molars \( \frac{6-6}{8-8} \) = 40. (Lesson.)

Geographical Distribution of the Genus.—Peculiar to the Western Polynesia or Malaia (Lesson).

Example, Cuscus maculatus (Didelphis Orientalis of Gmelin; Cuscus Ambonensis of Laçcépide; Phalangista maculata of Geoffroy).

Description, Habits, and Locality.—This species, which is named Coecosus at the Moluccas, according to Valentyn, varies much in its colouring, with reference to sex and age. M. Lesson, who found it at Wagiou, where the natives call it Scham-scham, says that its fur, which is thick and woolly, is generally whitish, covered with isolated brown spots, sometimes running together. The same author states that its habits are slow and nocturnal, and that it lives on fruits in the equatorial forests of the great Molucca and Papuan Islands.

Cuscus maculatus.

Petaurus. (Shaw.)

Generic Character.—Head rather short; ears small and hairy; skin of the flanks extended between the anterior and posterior limbs, and covered with hair; tail not strictly prehensile.

Dental Formula:—Incisors \( \frac{6}{2} \); canines 0-0; molars 0-6 = 8-8

It will be observed that the number of lower molar teeth given in the cut amounts only to five, and consequently does not correspond with the formula given above, or with that stated by M. F. Cuvier himself, who makes the total number of teeth 22 in the upper jaw, and 16 in the lower, and the number of upper false molars 8, and of molars 8 also; the number of lower molars being 6 false and 8 true, = 35 in all. He tells us that this form of dentition is taken from Phalangista Cooki, Petaurus Taguanotidae.

Teeth of Petaurus. (F. Cuvier.)

Mr. Bennett, who, in common with Cuvier, Decimus, and Lesson, has placed the interesting species which we have chosen as the example under the genus Petaurus, remarks that M. F. Cuvier, relying solely on the discrepancy or agreement of the dentary systems, and putting entirely out of the question all consideration of other and essential points of structure, has reunited the old genus Phalangista, in order again to subdivide it into two incongruous and heterogeneous groups: in the one confounding two well marked species of flying Petaurus not only with the climbing Phalangista of New Holland, but with the naked-tailed and strictly prehensile Coecosus of the Moluccas; repaying the other group, which he had so unnecessarily dismembered, by the addition of a true Phalangista, whose only pretensions to such an association are made to depend on a somewhat similar arrangement of the teeth. 'By thus confining himself to a single character,' continues Mr. Bennett, 'he has broken up the regular series of affinities which connected together three marked but still closely allied genera into form, to substitute an arrangement which has no other recommendation than the theoretic views of its author. In such a case we cannot hesitate in giving to the organs of locomotion, combined with the general habit, that precedence before those of mastication, which, under other circumstances, we are generally in the habit of according to the latter; and we feel the less repugnance to adopting this course, because it is admitted that the dentary formula in these animals subject to some variation, and because zoologists are by no means agreed with respect to its exact definition. The teeth of the Squirrel Petaurus agree generally, according to M. F. Cuvier, with those of the Phalangistas. They are consequently 35 in number, 20 occupying the upper jaw, and 18 the lower. The former are divided by the same eminent naturalist into six incisors, four canines, two false molars, and eight true ones; the latter consisting of two incisors, no canines, with eight false and as many true molars. The dentary character of the original species of Petaurus, which he takes as the type of his other group, differs chiefly in the total want of canine teeth, as we may here be permitted to observe that it appears to us somewhat doubtful how far those which are above enumerated as such truly deserve the name which has been applied to them. In every other respect the little creature in question perfectly agrees with the group of animals to which we have referred it; and which are at once characterised by the broad expansion of
their skin on each side of the body, extending between the anterior and posterior limbs, as in the Flying Squirrel, to which indeed they bear a close resemblance. In common with nearly the whole of the mammiferous quadrupeds of the country where they inhabit, they possess the abdominal pouch which fixes their place in the system among the marsupial animals; and, as in many of these, the thumbs of the hind-feet are long and distinctly opposable to the sole. The other toes are four in number, and furnished with tolerably strong claws, of which the thumbs are destitute. The fore-feet have long radiating toes, the middle one of which is the longest, all armed with similar claws to those of the hind-feet. The tail is round, covered with loose hair, somewhat tapering towards the point, and not strictly prehensile, having no naked surface at its extremity beneath. In size the present species is about equal to the common Squirrel, and its tail is rather longer than its body. Its colour is delicately gray above, somewhat darker on the head, and white beneath. A black line passes from the point of the nose along the back towards the tail; and the lateral folds of the skin are bounded in front and on the sides by a similar band, which confounds itself gradually in the inside with the gray of the body, and is bordered at the outer margin by a fringe of white. The eyes are each placed in a spot of black, and a faint blackish line extends along the upper surface of the hinder limbs. The tail is also of a darker hue, especially towards its extremity.

Example. Petaurus setiferus (Norfolk Island Flying Squirrel) figured and described in Phillip's Voyage.

Description.—See above.

Phascolarctos cinereus (Squirrel Petaurus).

Habits and Locality.—"During the day," says Mr. Bennett, "the animal generally remains quietly nestled in the hollows of trees, but becomes animated as night advances, and skims through the air, supported by its lateral expansions, half leaping, half flying from branch to branch, feeding upon leaves and insects. This peculiar mode of locomotion can scarcely be considered as a true flight, inasmuch as the cutaneous folds which serve the purposes of wings seem rather destined for the mere support of the animal in its flight in the air and directing its course towards any given object. For this latter purpose they are indeed but little fitted by their structure, the want of proper muscles in a great measure incapacitating them from performing such offices as dependent on volition. It may be doubted however whether these animals are entirely destitute of the power of exercising their will in their flight-like leaps. For the following anecdote bearing upon this subject we are indebted to our friend Mr. Broderip, who related it to us on unquestionable authority. On board a vessel sailing off the coast of New Holland was a Squirrel Petaurus, which was permitted to roam about the ship. On one occasion it reached the mast-head, and as the sailor who was despatched to bring it down approached, made a spring from aloft to avoid him. At this moment the ship gave a heavy lurch, which, if the original direction of the little creature's course had been continued, must have plunged it into the sea. All who witnessed the scene were in pain for its safety; but it suddenly appeared to check itself, and so to modify its career that it alighted safely on the deck." Those that have seen in captivity are in a state of somnolency all day; one kept at the Garden in the Regent's Park was formerly in the possession of the then marchioness of Cleveland. At night it was lively and active, and was perfectly tame, but rather shy. The species inhabits New South Wales, and is said to be abundant at the foot of the Blue Mountains.

There seems to be no authority for the locality of Norfolk Island as a habitat of this very pretty little animal, excepting the figure and description in Phillip's Voyage above alluded to. The fur would be highly ornamental from its colour, softness, and beauty, as an article of dress.

Phascolarctos (De Blainville; Lipurus, Goldfuss; Amblitus, Jiliger).

Generic Character.—Body stout. Head short, ears shaggy. Limbs rather short, robust, and nearly equal in length. Toes five on each fore-foot; the anterior toes divided into two groups for prehension, the thumb and the fore-finger being in one group, and the remaining three fingers in the other, the thumb of the posterior foot very large, but without a nail, and the two inner fingers united. Tail very short, almost null. Mr. Martin says that it differs from the Wombat in its dental formula, in which respect it closely resembles the Kangaroo.

Dental Formula:—Incisors 6; canines $\frac{1-1}{0-0}$; spurious molars $\frac{1-1}{0-0}$; true molars $\frac{4-4}{4-4} = 30$.

The canines are small, and in the intermaxillary suture. The false molars are compressed and trenchant, but thicker than in Hypsiprymnus, the dentition of which, otherwise, that of the Koala resembles closely. The lower true grinders are narrower than the upper ones, and both quadricuspid.

Only two species is known, namely Phascolarctos cinereus (Goldfuss; Phascolarctos fuscus of Desmarest; Phascolarctos Flindersii of Lesson. The Ashy Koala).

Phascolarctos cinereus (Ashy Koala).

Description, Habits, and Locality.—As large as a dog of moderate size. Fur long, thick, rather coarse, and ash brown, tufted ears rather lighter. It is said to have the gait and carriage of a young bear, to be arboreal in its habits, and to pass its life upon trees and in dens or holes which it hollows at their feet. Of its powers of climbing there can be no doubt; the structure of its extremities would lead to this inference, and actual observation has confirmed it. Its locality is New Holland, and we are enabled to give figures of the parent and young, taken by the kind permission of a friend, from a very accurate and beautiful drawing executed from the living animals, the first that were known in the colonies. They were brought in by natives to Colonel Paterson, then lieutenant-governor of the
Description.—Size of Phallic; general color grayish-rufous above, reddish-brown below, head and tail large, tail very long, base broad, terminally rounded, long, and bushy. The ears are long and pointed, and the tail is thick and bushy. The eyes are black. The feet are large, and the claws are long and strong. The color is gray with a brownish tinge. The hairs are short and thick, and the underparts are white.

Superficially similar to the genus *Halmaturus*, but differs from it in the following respects:—

1. The head is broader than in *Halmaturus*.
2. The tail is longer and bushier.
3. The claws are longer and stronger.
4. The color is lighter and more uniform.

The specimen described by Mr. Ogilby was brought from the island of New Guinea and is said to have been brought from the island of New Guinea by the native inhabitants.

**Generic Characters.**—Head, elongated; body, robust; tail, bushy; claws, long; color, grayish.

**Specific Characters.**—Size, large; tail, bushy; claws, long; color, grayish.

**Distribution.**—Found in the islands of New Guinea and New Holland.

**Remarks.**—This animal is very similar to the genus *Halmaturus*, but differs from it in the following respects:—

1. The head is broader than in *Halmaturus*.
2. The tail is longer and bushier.
3. The claws are longer and stronger.
4. The color is lighter and more uniform.

The specimen described by Mr. Ogilby was brought from the island of New Guinea and is said to have been brought from the island of New Guinea by the native inhabitants.

**Genus Hypsiprymnus** (Linn. 1758).

**Species.**—

1. *H.Jacksoni* (Linn. 1758).
2. *H. Minimus* (Linn. 1758).
3. *H. Hypsiprymnus* (Linn. 1758).
4. *H. Hypsiprymnus* (Coll. 1758).

**Description.**—Size, large; tail, bushy; claws, long; color, grayish.

**Distribution.**—Found in the islands of New Guinea and New Holland.

**Remarks.**—This animal is very similar to the genus *Halmaturus*, but differs from it in the following respects:—

1. The head is broader than in *Halmaturus*.
2. The tail is longer and bushier.
3. The claws are longer and stronger.
4. The color is lighter and more uniform.

The specimen described by Mr. Ogilby was brought from the island of New Guinea and is said to have been brought from the island of New Guinea by the native inhabitants.
This extraordinary animal, discovered by Captain Cook, is now so well known, that a description, in addition to our illustrations and account of its animal economy at the beginning of this article, would be superfluous. Our countrymen pursued it in New Holland with greyhounds, and the leaps which it took surprised those who beheld it: barriers seven or eight feet high. In size it equals a sheep, some of the largest weighing 140 lbs., and the flesh is represented by those who have tasted it as being a little like venison. The species breeds pretty freely in this country, and has been kept with success in our parks.

Locality.—New Holland.

There are several other species.

**Phascolomys.** (Geoffroy.)

Generic Character.—Body clumsy. Head large and shaggy. Fore-feet with five toes, armed with crooked nails; hind-feet with four, and a little tubercle without a nail, in place of the great toe; indeed it may be said to have but two toes on the hind-foot. Tail nearly null.

Dental Formula:—Incisors \( \frac{6}{2} \); canines \( \frac{0}{0} \); molars \( \frac{4-4}{4-4} = 24 \).

Example, *Macropus Major* of Shaw (Kangurus labiatus) (Geoffroy); *Didelphis major* of Gmelin: *The Kangaroo*.

Dental Formula:—Incisors \( \frac{6}{2} \); canines \( \frac{0}{0} \); molars \( \frac{4-4}{4-4} = 24 \).

Example, *Macropus Major* of Shaw (Kangurus labiatus) (Geoffroy); *Didelphis major* of Gmelin: *The Kangaroo*.

Teeth of *Phascolomys*, or *Wombat* (P. Cuvier), nearly of the natural size.

Example.—The only species known is *Phascolomys Wombat* (Didelphis urina) of Shaw; *The Wombat* of the natives, navigators, and naturalists.

Description.—From Lieut.-Col. Collins's "Account of the English Colony of New South Wales" (1802), we select the following part of a description of a *Wombat* found on Cape Barren Island, abstracted from Bass's "Journal":—

"The Wombat, or, as it is called by the natives of Port Jackson, the Wombach, is a squat, short, thick, short-legged, rather inelastic quadruped, with great appearance of stumpy strength, and somewhat bigger than a large turnspit dog. Its figure and movements, if they do not exactly resemble those of the bear, at least strongly remind one of that animal. Its length, from the tip of the tail to the tip of the nose, is thirty-one inches, of which its body takes up twenty-three and five-tenths. The head is seven inches and the tail five-tenths. Its circumference behind the fore-legs twenty-seven inches; across the thickest part of the belly thirty-one inches. Its weight by hand is somewhat between twenty-five and thirty pounds. The hair is coarse, and about one inch or one inch and five-tenths in length, thinly set upon the belly, thicker on the back and head, and thickest upon the loins and rump; the colour of it a light sandy brown of
On Their new but the habit, it seemed that the animal might vary in point of intellect. In both cases, as long as there was no positive pain or disagreeable sensation, the animal was content, however new its situation might be. There was none of that anxiety and uneasiness which all animals of lively sense show when suddenly placed in new positions or at that time; it was indeed the following remark is appended to Mr. Base's account of the capture of his Wombat. 'The Kangaroo and some other animals New South Wales were remarkable for being domesticated as soon as taken.' This may be one of the consequences of the low cerebral development generally to be observed in this group.

Phascolomys Wombat.

**Fossil Marsupialia.**

Besides the Fossil Opossum (Didelphys Cuvierii) of the Montmartre Gypsum, figured and described by Cuvier at the 'Annales du Muséum,' and in his 'Histoire de la Terre et de ses Habitants,' and the fossil Dasyurus, Hypsiprymnus, Halmaturus, Phascolomys, and Kangaroo, described by Mr. Cliif and Cuvier and Mr. Penland, from the Australian bone-caves and bone-breeds, there are some fossil forms generally considered as belonging to the Marsupialia, which it will be necessary, on account of the great interest which attaches to them both geologically and zoologically, to mention more at length. We commence with those fossil jaws originally described as belonging to the Marsupialia, which were found at Stonestfield.

Thylacothère. (Owen.)

In consequence of strong doubts* having been recently expressed by Mr. de Blainville, from inspection of some respecting the mammiferous nature of the fossil jaws found at Stonestfield, and assigned to the Marsupialia by Cuvier, a paper 'On the Jaws of the Thylacothère Prov. from Stonestfield' was read before the Geological Society by Richard Owen, Esq., F.R.S., G.S., &c., Heri-rian professor in the Royal College of Surgeons at the 21st of November, 1838, being the first of two memoirs meeting the objections, and giving a detailed account of the fossils from a careful inspection of the originals. In this communication Mr. Owen confined his description to the jaws discovered at Stonestfield, characterised by having eleven molars in each ramus of the lower jaw. He commenced by observing that the scientific world possessed a simple experience of the truth and tacit with which the
trous Cuvier judged his determinations to be such that he distin-
guished a comparative anatomist as M. de Blainville questioned the determinations, that it became the duty of those who possessed the means to in-
vestigate the nature of the doubts, and re-assure the confi-
dence of geologists in their great guide.

The specimens described at Oxford, in 1818, one of the jaws described in Mr. Owen's paper, and in the possession of Dr. Buckland, he decided that it was allied to the Didelphes ("seemblent de quelqul Didelphus "); and when doubts were raised by M. Constant Prevoit, in 1824, raised his doubts, M. Blainville. The examination of a drawing made for the express purpose, was confirmed in his former determination; but he added that the jaw differed from that of all known carnivorous Mammals, in having ten molars in a series in the lower jaw, an arrangement that conformed dans l'idée que la pre-
mier inspection m'euat donné. C'est celle d'un petit carnivore dont les mâchelâtres ressemblent beaucoup à celles des sarigues; mais il y a dix de ces dents en série, nombre que ne montre aucun carnivore connu. "Os. Foss., v. (of note)."

It is to be regretted that the particulars of the data, with the exception of the number of the teeth, on which Cuvier based his opinion, were not detailed; but he must have been well aware that the grounds of his belief would not convince a characterised and competent anatomist: it is also to be regretted that he did not assign to the fossil a generic name, and thereby pre-
vent much of the reasoning founded on the supposition that he considered it as belonging to a true Didelphes.

This was the first time that the structure of the jaw, and that of having had in his possession two specimens of the Thylocotherium Prevoitii belonging to Dr. Buckland, he had no hesitation in declaring that their condition is such as to enable any anatomist conversant with the established generalisations in comparative oste-
ology, to pronounce therefrom not only the class but the more restricted group of animals to which they have be-
longed. The specimens plainly reveal, first, a convex arti-
cultural condyle; secondly, a well-defined impression of what was the articular process beneath it; and thirdly, a regu-
lar, condylar process, rising immediately anterior to the condyle, having its basis extended over the whole of the interspace between the condyle and the commencing of the molar series, and having a vertical diameter equal to that of the horizontal range of the jaw itself; this impres-
sion also exhibits traces of the ridge leading forwards from the condyle and the depression above it, which characterises the condylar process of the zoolphagous marsupials; thirdly, the angle of the jaw is continued to the same extent below the condyle, the process remains, and in its apex be continued backwards in the form of a process; fourthly, the parts above described form one continuous portion with the horizontal ramus of the jaw, neither the angle of nor the condyle being prominent, as in reptiles. These are the characters, Mr. Owen believes, on which Cuvier formed his opinion of the nature of the fossil; and they have arrested the attention of M. Valen-
ciennes in his endeavours to dissipate the doubts of M. de Blainville.

From the examination of a cast, M. de Blainville however has been induced to infer that there is no trace of a convex con-
dyle, but in place thereof an articular fissure, somewhat as in the jaws of fishes; that the teeth, instead of being enucleated, are still in situ, and that their anchoyed to the substance of the jaws; and that the jaw itself presents evident traces of the composite structure.

In answer to the first of these positions, Mr. Owen stated that the portion of the true condyle which remains in both the teeth and the jaws, which was reduced or lost by M. Valenciennes, clearly shows that the condyle was con-
vex, and not concave. It is situated a little above the level of the grinding surface of the teeth, and projects beyond the vertical line dropped from the extremity of the con-
trary condyle, and is thus equal to the same extent as in the true Didelphes. In the specimen examined by M. Valenciennes the condyle corresponds in position with that of the jaw of the Dasyurus rather than the Didelphes: it is convex, as " Os. Foss., tom. v. p. 346."


*Comptes Rendus*, 1856; Second Series, No. 11, Sept. 10, p. 847, et seq.

F. C. No. 909.

in mammiferous animals, and not conceave, as in ovisprous.

The entire convex condyle exists in the specimen belonging to the other genus, Phaeoscelotherium, now in the British Museum, but formerly in the cabinet of Mr. Broderip. Mr. Owen is of opinion that the entering angle or notch, either above or below the true articual condyle, has been mistaken for "une sorte d'échancrure articulaire, un peu comme dans le dechere en bas du molaire." The specimen of the half-jaw of the Thylocotherium examined by Mr. Valenciennes, like that which was transmitted to Cuvier, presents the inner surface to the observer, and exhibits both the orifice of the dental canal and the sym-
physis. The former of these was considered by both, as more strongly developed relatively forward than in the recent Opossum and Dasyure, or in the Placental Insectivora, but has the same place in the marsupial genus Hypochoerus. The symphysis is long and narrow, and is continued forward in the same line with the genty convex inferior margin of the jaw, which thus tapers gradually to a pointed anterior extremity, precisely as in the jaws of the Marsupial Insec-
tivora.

In the relative length of the symphysis, its form and position, the jaw of the Thylocotherium precisely cor-
responds with that of the Didelphes.

In addition however to these proofs of the mammiferous nature of the Stonesfield remains, and in part of their hav-
ing belonged to Marsupials, Mr. Owen stated that the jaws which exhibit an uncanine or a non-carnivorous form, which have written respecting them, but which, if co-existent with a convex condyle, would serve to prove the marsupial nature of a fossil, though all the teeth were wanting.

The recent marsupials the angle of the jaw is elongated and bent inwards in the form of a process, varying in shape and development in different genera. In looking therefore directly upon the inferior margin of the marsupial jaw, we see, in place of the edge of a vertical plate of bone, a more or less curved and indented marginal process between the external ridge and the internal process or in-
flected angle. In the Opossum this process is triangular and tridedral, and directed inwards with the point slightly curved upwards and extended backwards, in which direction it is more produced in the small than in the large species of Didelphus.

Now, observed Mr. Owen, if the process from the angle of the jaw in the Stonesfield fossil had been simply con-
tinued backwards, it would have resembled the jaw of an ordinary placental carnivorous or insectivorous mammal; but in both specimens of Thylocotherium, the half-jaws of which exhibit their inner or mesial surfaces, this process presents a fractured outline, evidently proving that when alive it must have been produced inwards or mesially, as in the Opossum.

Mr. Owen then described in great detail the structure of the teeth, and showed, in reply to M. de Blainville's second objection, that they are not confluent with the jaw, but are fixed by a mesial process, extending from the most anterior molar, to some extent upwards and inwards, and extending to the posterior molar. The distinguishing feature is the form of the teeth, as judged by their mesial, or opposite surface, and the form of the condyle, and the angle of the jaw. The process of evagination, or the course by which the mammalia became ever more produce in the small than in the large species of Didelphus.

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The jaw of Thylacotherium Pavoecoti. Upper figure magnified.

Some discussion having ensued, in which Dr. Grant and Mr. Ogilby expressed opinions in support of M. de Blainville's views, Mr. Owen, on the occasion of reading, on the 9th of December following, his paper on Phascacolithium, being a part of the "Description of the Remains of Marsupial Mammalia from the Stonefield state," gave a brief summary of the characters of the Thylacotherium, described in the first part of the memoir, and which he conceived fully proved the mammiferous nature of that fossil. He stated that the remains of the split condyles in the specimen demonstrate their original convex form, which is diagnostically opposite to that which characterises the same part in all reptiles and all oviparous animals; that the size, figure, and position of the coronoid process are such as were not found in the Insectivora; and that the mammal endowed with a temporal muscle sufficiently developed to demand so extensive an attachment for working a powerful carnivorous jaw;—that the teeth, composed of dense ivory with crowns covered with a thick coat of enamel, are everywhere distinct from the remainder of the teeth in that they have two fangs deeply embedded in it;—that these teeth, which belong to the molar series, are of two kinds; the hinder being bristled with five cusps, four of which are placed in pairs transversely across the crown of the tooth, and the anterior or false molars, having a different form, and only two or three cusps—characters never yet found united in the teeth of any other than a zoophagous mammiferous quadruped;—that the general form of the jaw corresponds with the preceding indications of its mammiferous nature. Fully impressed with the value of these characters, as determining the class to which the fossil belonged, Mr. Owen stated that he had sought in the next place for secondary characters which might reveal the group of Mammalia to which the remains could be assigned. It had been found that in the construction of the jaw, combined with the form, structure, and proportion of the teeth, sufficient evidence to induce him to believe that the Thylacotherium was a mammal quadruped.

Mr. Owen then recapitulated the objections against the mammiferous character of the Thylacosaurus, which have given sufficient cause to believe that they are in a condition to enable these characters to be fully ascertained: he next reviewed, first, the differences of opinion with respect to the actual structure of the jaw; secondly, with respect to the interpretation of anatomical appearances.

1. As respects the structure.—It has been asserted that the jaws must belong to cold-blooded vertebrata, because the articulating surface in the form of an entering angle: in which Mr. Owen replied, that the affinities and other parts of the fossil, as it is here presented, indicate the assemblage of a convex condyle, which is met with in no other class of vertebrata except in the Marsupialia. Again, it is asserted that the teeth are all of an uniform structure, as in certain reptiles; but, on reference to the fossils, Mr. Owen stated that it will be found that such is not the case, and that the actual difference in the structure of the teeth strongly supports the mammiferous theory of the fossils.

2. With respect to the argument founded on an inspection of the jaw, it is asserted that, if such a fossil exists, the author should doubt that the Thylacotherium having elements of each of the lower jaw is no objection to its mammiferous nature, because among the placental Carnivora the Canis familiaris has constantly one more grinder on each side of the lower jaw than the actual number; because in some of the insectivorous or Armadillo, and Mammalia, has ten molars in each ramus of the lower jaw; and the Myrmecobius, among the Marsupialia, has nine molars on each side of the lower jaw; and because some of the insectivorous animals has the number, with the teeth of a number of reptiles and mammals, have the teeth of the two fangs. Mr. Owen showed was futile, as the greater number of the spurious molars in every general statement of the placental, and a few of the whole of them in the Marsupialia. If the second ramus in the Stonefield jaws had been absent, and with it the evidence of their mammiferous nature afforded by the caninoid, coronoid, and angular processes, Mr. Owen stated that he would not have been disposed to the teeth it appears insufficient proof, especially in their double fangs, that the fossils do belong to the highest class of animals.

In reply to the objections founded on the double fangs of the Baliosaurus, Mr. Owen said, that the character of the fossil has long been known to every paleontologist, is the only animal of the same nature, which the animal belonged; and in answer to the question that certain sharks have double fangs, he explained that the widely bifurcated basis supporting the teeth of the shark is no part of the actual tooth, but true bone, and ossified in the labial margin, and that a similar structure is present in the marsupial, and is a part of the double fangs, that the fossils do belong to the highest class of animals.
in the "Zoological Journal, and its distinction from the Thylacotherium clearly pointed out. The condyle of the jaw is entire, standing in bold relief, and presents the same form and degree of convexity as in the genera Didelphys and Dasyurus. In its being on a level with the molar teeth, it corresponds with the marsupial genera Dasyurus and Thyacynus, as well as with the placental Omnivora. Here, and in the pugilist, that part bears an extended oblique base, similar to the inclined angle of the Thyacynus. In the Phacocherotherium the flattened inferior surface of the jaw, external to the fractured inclined angle, inclines outwards at an obtuse angle with the position of the incisors and canines, as in the Thyacynus and Dasyurus; but this difference is not one which approximates the fossil in question to any of the placental zoophaga; on the contrary, it is in the marsupial genus Phascolomys, where a precisely similar section of the inferior ramus is exhibited, and where the ascending ramus of the jaw is manifested. In the position of the dental foramen the Phacocherotherium, like the Thyacynus, differs from all zoophaga and marsupials and the placental Omnivora, but in the Phascolomys and the marsupial herbivora, the orifice of the dental canal is situated, as in the Stoneseed fossil, very near the vertical line dropped from the last molar tooth. The form of the symphyseal, or the Phascolomys, cannot be truly determined; but Mr. Owen stated his opinion that it resembles the symphysis of the Didelphys more than that of the Dasyurus or Thyacynus.

Mr. Owen agrees with Mr. Broderip in assigning four incisors to each ramus of the lower jaw of the Phacocherotherium, as in the Didelphys; but in their scattered arrangement they resemble the incisors of the Myrmecobius. In the relative extent of the alveolar ridge occupied by the grinders, and in the proportions of the grinders to each other, especially the small size of the hindermost molar, the Phacocherotherium resembles the Opossum, Dasyurus, or Thyacynus; but in the form of the crown the molars of the fossil resemble the Thyacynus more closely than any other genus of Marsupialia. In the number of the grinders the Phacocherotherium resembles the Opossum and the Thyacynus in wanting a pointed tubercle on the inner side of the middle large tubercle, and in the same transverse line with it, the place being occupied by a broad, thick, but very extended on the outer side of the base of the crown of the true molars, and projects a little beyond the anterior and posterior smaller cusps, giving the quinquesepean appearance to the crown of the teeth. This ridge, which in the Phacocherotherium represents the incisor of the marsupial series is between the Didelphys and Thyacynus, is wanting in Thyacynus, in which the true molars are more simple than in the Phacochertherium though hardly less distinguishable from the false molars in the second true molar of the Phacochertherium the internal ridge is also obsolete at the base of this cusp, and this tooth presents a close resemblance to the corresponding tooth in the Thyacynus; but in the Thyacynus the two posterior molars increase in size, while in the Phacochertherium they progressively diminish, as in the Mr. Owen offered one remark, the importance of which, he said, would be obvious to all as to who were and to those who were not conversant with comparative anatomy. The cumulative evidence of the true nature of the Stoneseed fossils, afforded by the shape of the condyle, coronoid process, angle of the jaw, different kinds of teeth, shape of their crowns, double fangs, implantation in sockets, the appearance, he repeated, presented by these important particulars cannot be due accidental; while those which favor the evidence of the opinion that, of the two linear impressions which have been mistaken for harmonie, or toothless sutures, one, a faint and similar inner impression continued from the base of the penultimate and postulimate molars obliquely downwards and backwards to the foramen of the dental artery, is due to the pressure of a small artery, and he stated that he possessed the jaw of a Didelphys, which exhibits a simile in the same place. Mr. Owen remarks distinctly, in the Phacochertherium does not occupy the same relative position as any of the contiguous margins of the opercular and dentary pieces of a reptile's jaw. The other impression in the jaw of the Phacochertherium is a deep groove continued from the anterior extremity of the fractured base of the impressed angle obliquely downwards to the broken surface of the anterior part of the jaw. Whether this line be due to a vascular impression or an accidental fracture is doubtful; but as the lower jaw of the Wombat presents an impression in the precisely corresponding situation, and which is undoubtedly due to the presence of an artery, Mr. Owen conceives that this impression is also natural in the Phacochertherium, but equally unconnected with a compound structure of the jaw; for there is not any suture in the compound jaw of a reptile which occupies a corresponding situation.

The most numerous, the most characteristic, and the best-marked sutures in the compound jaws of a reptile are those which define the limits of the coronoid, articular, angular, and surangular pieces, and which are chiefly conspicuous on the inner side of the posterior part of the jaw. Now the corresponding surface of the jaw of the Phacochertherium is entire; yet the smallest trace of sutures, or of any indication that the coronoid or articular processes were distinguished from the articular surface as it is in the fossil, it can hardly be doubted to be more than one, are present in the compound jaw of a reptile. Where sutures ought to be visible, if the jaw of the Phacochertherium were composite, there are none; and the hypothetical sutures that are apparent do not agree in position with any of the real sutures of an oviparous compound jaw.

Lastly, with reference to the philosophy of pronouncing judgment on the Saurian nature of the Stoneseed fossils from the appearance of sutures, Mr. Owen offered one remark, the importance of which, he said, would be obvious to all as to who were and to those who were not conversant with comparative anatomy. The cumulative evidence of the true nature of the Stoneseed fossils, afforded by the shape of the condyle, coronoid process, angle of the jaw, different kinds of teeth, shape of their crowns, double fangs, implantation in sockets, the appearance, he repeated, presented by these important particulars cannot be due accidental; while those which favor the evidence of the
of the author's opinion, simply tripped, and without any appearance of interior lobes. As to the canines and molar
s, Mr. Ogilby said that the tooth in _D. Buchlandii_,
which has been called a canine, is not larger than some of the
presumed mammarys, and that the two are separated as to occupy full five-sixths of the entire
dental line, whilst in the _Dasyurus vincerus_ and other
species of insectivorous Marsupials they occupy one-fifth
of the same space. Their being arranged longitudi-
nally in the same line with those of the latter, he
conceived another objection, because, among all mammals, the
molars occupy the front of the jaw, and stand at right angles
to the line of the molars. With respect to the supposed
compound structure of the jaw, Mr. Ogilby offered no
formal opinion, but contented himself with saying that
the appearances: he nevertheless objected to the grounds
being considered the impression of blood-vessels, though he
admitted that the form of the jaws is altogether different
from that of any known reptile or fish.

From a due consideration of the whole of the evidence,
Mr. Ogilby stated, in conclusion, that the fossils present so
many important and distinctive characters in common with
mammals on the one hand, and cold-blooded animals on
the other, that he does not think naturalists are justified in
pronouncing definitively to which class the fossils really
belong. (Geol. Proc., 1838-39, vol. iii.)

On the 9th of January, 1839, Mr. Owen proved, in a
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in its enamelled structure and position (b), and the section of the Wombat's teeth. It differs however in the quadrilateral figure of its transverse section, in which it corresponds with the inferior incisors of the Hippopotamus.

**Dasyurus.**

* Dasyurus lamarius, closely resembling *Dasyurus Ursinus*, but differing from it in being one-third larger, and in having smaller canines or laniaries of proportionately larger size. Another specimen leads Mr. Owen to doubt whether it is the lower jaw of *Dasyurus lamarius*, or of some extinct manurnal carnivore of an allied but distinct species.

The general result of the examination of the remains found in the Wellington Valley caves are,—1st. That the fossils are not referrible to any known extra-Australian genus of mammals. 2nd. That the fossils are not referrible, from the present evidence, to any existing species of Australian mammal. 3rd. That the greater number certainly belonging to species, as the *Macropus* and *Hypurusgenus*, are all of young individuals; while those of the burrowing Wombat, the climbing Phalanger, and the ambulatory Dasyure, are the remains of adults. (Owen, in Mitchell's *Three Expeditions into the Interior of Eastern Australia*.)

Dr. Buckland observes, that the discovery of the *Marubiadinia*, both in the secondary and tertiary formations, shows that this order, so far from being of more recent introduction than other orders of Mammalia, is in reality the first and most ancient condition under which animals of this class appeared upon our planet; that, in fact, was their only form during the secondary period;—that it was co-existent with many other orders in the early parts of the tertiary period; and that its geographical distribution in the present creation is limited to North and South America, and to New Holland, with the adjacent islands.

**MARSUPIOCRINITES.** a genus of Crinoidea, recently proposed by Professor Phillips for some remarkable fossils noticed by Mr. Murchison in the strata of the Silurian system. (*The Silurian System*, pl. 18, f. 3.) The arms are formed of two rows of calcareous plates.

**MARSUPIOCRINITES.** [Encyclopaedia, vol. ix. p. 393.] **MARSUPIITES**, a fossil genus of *Echonoderma*, stated to be extinct species as a subclass of the *Acanthocrinoidea*. It was the former species of the order of the *Sarcoptocrinoidea*. Its existence is known to all the biologists of the world, and it is a fact that it has been found in rocks of the same age as those in which the fossils of the *Echonoderma* were discovered.

**MARTABAN.** [Travassier.] **MARTEL, CHARLES**. **MARTEL, CHARLES M.** **MARTELLO TOWER**, a circular building of masonry, generally two stories high; the lower story is divided into chambers for the reception of stores, and the upper serves as a casemate for troops; the roof is vaulted, and that of the upper story is shell-proof. The wall of the building having a thickness of two feet, and rising to the height of the roof, are placed pieces of artillery which rest on platforms of timber traversing on pivots, so that the guns are capable of being fired in any direction. The entrances are at a considerable height above the ground, and over these are machicolations. The whole work is generally surrounded by a ditch and glacis.

* It is probable that the name of such works should be Mortella Towers, since it is supposed to have been derived from that of a fort in Mortella (Myrtilly) Bay, Corse, which after a gallant resistance and in defiance of order, a British naval force during the late war, built on the coasts of this country, in Jersey, and elsewhere; but most of them have, since the peace, been taken down, from an opinion that the defence which could be made from such a work, would not be adequate to the expense of keeping them in repair.

**MARTEN**, or **MARTIN** (Mammalogy), the name of a carnivorous quadruped (*Mustela Martes, Linn.*), of the Weasel family. [Weasel.]

**MARTIAL LAW** is a series of regulations made to preserve order and discipline in the army, and enforced by the prompt decisions of courts-martial; this is generally however called military law. During the existence of a rebellion, when the civil courts would be inoperative, martial law is employed to suppress the disorders and secure the safety of the army; after the trial of the latter takes place according to the practice of martial courts, that province or state is said to be subject to martial law.

On the occurrence of such a calamity in any part of the British dominions, the two houses of Parliament are jointly to order the suspension of the Habeas Corpus Act shall take place. This measure is, of course, adopted only in cases of great emergency, on account of the abuses to which it may give rise; and the necessity of it and the trial of its operation is sometimes demanded by the provisions of this power. The act by which martial law was declared in Ireland during the Rebellion in 1798 may be seen in Tyler's *Essay on Military Law*, Appendix, No. 6.

A merely local tumults the military commander is called upon to act with his troops only when the civil authorities have failed in preserving peace; and the responsibility of employing soldiers on such occasions falls entirely upon the magistrate. The military officer must then effect by force what by other means could not be accomplished; and for this purpose, the officer can be answerable only to a military court or to the parliament of the nation.

The constitution of this country permits a military law for the government of the army, even in times of internal tranquillity, of war, or peace; but the former applies to military persons alone; among these its jurisdiction comprehends all matters relating to the discipline of the army, to the cognizance of which the civil courts are not competent,—the military commander, for instance, may be ordered to take into military custody those who are guilty of such crimes as desertion, mutiny, and holding correspondence with the enemy. On the other hand, every citizen who is not engaged in the military profession is subject to the general laws of the land, and is free from all the restraints which, by the necessity of preserving discipline, are imposed on the soldier: he is his own master, he can dispose of his time at pleasure, and the peculiar regulations of the military service are, to him, as though they did not exist.

This distinction between the two classes of persons with respect to military law is clearly expressed in the 'Mutiny Act,' as it is called, which was first passed in the reign of William III. It is there stated that the subjects of this realm cannot be punished in any other manner than conformably to the common laws of the land, and that the reception is immediately made in the case of military persons; and there follow several enactments for the purpose of bringing soldiers who shall mutiny, excite sedition, or desert from the service, to a more exemplary and speedy punishment than in the civil courts.

Immediately after the Norman conquest of this country the military law consisted in the obligation imposed on the vassals of the crown to follow the king to the field, under penalty of a pecuniary fine or the forfeiture of their land. But the first known record concerning the regulation of the army is believed to be that which was made in the reign of King John; and this relates chiefly to the purchase of provisions at the sales held for supplying the army with necessaries. The ordinances of Richard II. and of
Henry V., and the statutes of Henry VIII., contain many useful rules for the government and discipline of the army. The king had power to punish soldiers only according to the laws of the realm. The court of high constable and high marshal of England had for many years an exclusive jurisdiction in all military affairs, and this was sometimes extended over the civil courts generally. The statute required that no wound or put out of countenance should be inflicted by a statute in the reign of Richard II. (1396), and it subsequently expired. From the time of Henry VII. till the reign of Charles I. the enactment of laws for the government of the army depended on the king alone.

The early kings of this country did not appear to have exercised, generally, a discretionary power over the army; for, at the death of the English king, the king had power to punish soldiers only according to the laws of the realm. The court of high constable and high marshal of England had for many years an exclusive jurisdiction in all military affairs, and this was sometimes extended over the civil courts generally. The statute required that no wound or put out of countenance should be inflicted by a statute in the reign of Richard II. (1396), and it subsequently expired. From the time of Henry VII. till the reign of Charles I. the enactment of laws for the government of the army depended on the king alone.

The edicts and translations of Martial are very numerous. There are several English translations, the latest of which, so far as we know, is by James Ephraim, London, 1782.

Martignes, Les, a town in France in the department of the Seine-et-Marne, on the communication between the Île-de-France and the sea. It consists of three parts communicating with each other by bridges: the most extensive part, called the Île, is on an island in the Seine; another part, called the Île d'Orsay, was given to the south-east and north-west banks respectively. The streets are generally well laid out and the houses neatly built. The banks of the Seine are lined with quays. There are a spacious and regularly built town-hall and a handsome church.

MARTIN, John VIII., succeeded Stephen VIII. in 1282; he died in 1284. He held a council of Italian bishops in the Lateran church, in which the Monophysites were condemned. The emperor Constantine II., who favoured the Monophysites, sent for him, and on arrival seized the person of the pope. Martin was taken to Constantinople, where a judicial inquiry was instituted against him for disobedience to the emperor, and he was banished to the Thracian Chersonesus, where he died in 635. He succeeded Paschal II. in 1227.

Martin II., called by some Martinus II., succeeded John VIII. in 1282, and died in 884. He was succeeded by Adrian III.

Martin III., called by some Martinus II., a Roman by birth, succeeded Stephen VIII. in 1282. He died in 1284, and was succeeded by Agapitus II.

Martin IV., cardinal Simon de Bré, a native of France, succeeded Nicholas III. in the papal chair in 1258, through the influence of Charles of Anjou, king of Sicily and Naples, and of the Sicilian Venetians. Charles of Sicily, Martin communicated Peter of Aragon, whom the Sicilians had elect ed king, but his excommunication was of no more avail than the arms of the Angeli, for the Sicilians stood firm against both. Martin excommunicated Abelard, and his excommunication was of no more avail than the arms of the Angeli, for the Sicilians stood firm against both. Martin excommunicated the Roman Emperor Michael, by which he widened the breach between the Greek and Latin churches. He died in 1285, and was succeeded by Honorius IV.

Martin V., Cardinal Otho Colonna, of an illustrious Roman family, was chosen by the college of Cardinals, after the death of John XXIII. and of the popes Gregory and Benedict. Martin closed the council of Constance, in April, 1417, without having effect ed the reforms in the church which were expected from it by Europe in general. Martin however promised to call together a new council for the purpose, which, after many delays met first at Siena and afterwards at Basel in Switzer
MARTINI, GIUSEPPE SAN, a composer of distinguished merit, and a most celebrated performer on the cello—an instrument which he may be said to have civilized—induces a native of Milan, was born at St. Christopher, in 1750. He was soon engaged at all the public and private concerts, and in 1740 was taken into the service of the Prince of Wales, and received the appointment of music-master to the princesses. His Twelve Sonatas for two violins and cello were composed for the princesses, but his best work is his Concertos for a full band, which display great invention, very elegant taste, and a thorough knowledge of his art. He died in 1750.

MARTINI, VINCENZO, commonly known as Martini of Madrid, was born at San Spire, about the year 1750. He was Maestro di Capella to the prince of Asturias, in 1785, and has always been thought one of the most agreeable composers of Italian operas. Among his works for the Teatro di L'Ambra, he did the music for 'Diana,' produced in Vienna in 1785, and 'La Cena Rara,' produced at the same time, in which he has been everywhere popular, particularly the latter, which is well known on our English as well as on the Italian stages, Stephen Storace having introduced most of it in Cohn's opera, the Siege of471

MARTINI*.

MARTINI, or MARTINICO, one of the largest of the Caribee Islands, is 10 leagues south-south-east of Dominica. The greatest length is 50 miles from north-west to south-east, and the mean breadth is about 16 miles. In 1839 it was found that there were about 1,300 families, and was being occupied by conical shaped hills. Three mountains of considerable height are visible on approaching the island in any direction; one of these, Mont Pelee, on the north-west side, is an exhausted volcano; the summit of the other is partially covered. The island contains a great amount of streams, and the coast, being indented by numerous bays and inlets, affords many good harbours. There are two principal towns, St. Pierre and Port Royal, both on the west side of the island; the former is in 14° 44' N. lat. and 61° 14' W. long, and the latter in 14° 55' N. lat. and 61° 7' W. long. Port Royal, the residence of the governor, stands on the north side of a deep and well sheltered bay, protected by a fort which covers the whole surface of a peninsula and commands the town and harbour. During the war and while Martini held the island in possession of the English, Port Royal was the general rendezvous and head-quarters of the fleet stationed in the West Indies. The Diamond Rock, which is about three leagues south-south-east from Port Royal bay, was taken possession of by the English between the breaking out of the war in 1802 and the capture of the island in 1810, and was commissioned and rated as a sloop of war in the British navy. St. Pierre is an open roadstead, affording very different shelter, and is situated in 14° 44' N. lat. and 61° 14' W. long. The trade of the island, and is said to be the handsomest town in the West Indies. It consists of three spacious streets parallel to the beach, and several transverse streets. Streams of water are conveyed through the principal streets, and impart a sense of freshness to the air most desirable in so warm a climate.

The population of the island in 1834 consisted of 36,766 whites and free coloured persons, and 78,233 slaves: together 114,999.

The staple product of the island is sugar, of which it yielded in 1834, 28,692 tons, besides 8748 tons of molasses and 365,600 gallons of rum. There were also grown about 600 tons of coffee, and small quantities of cotton, cocoa, and cloves. The total value of the imports in that year was £69,000, and of the exports £89,000. The number and tonnage of ships that arrived and sailed were—

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<th>Vessels</th>
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<td>Arrived</td>
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The foreign vessels were chiefly craft from the neighbouring English colonies: the rest were Americans.

Martini was first settled by a body of about 100 men headed by a French priest, M. Destrang, from St. Christopher, in 1633. The island was at that time peopled by Caribs, but in the course of a very few years they were exterminated. It was taken in 1762 by the English, and was restored to France in 1763. In 1794 it was again taken by the English, and again restored to France at the peace of Amiens. It was once more cap
tured by the English in 1810, and finally restored by the treaty of Paris in 1814, since which time it has remained under the dominion of France. At the beginning of the present year (1839) the island suffered the shock of an earthquake, which did considerable damage to the town of St. Pierre, and almost wholly destroyed Port Royal, in which town towards 1800 stood the factories, and the buildings, including nearly all the inmates of the principal hospital. The works and the negro villages of many of the sugar plantations were destroyed by the same shock.

MARTLET. [HERALDRY.] MARTOS, IVAN PETROVITCH, director of the Academy of Fine Arts, St. Petersburg, was not only the most eminent sculptor Russia has yet produced (and she has given birth to a Prokofiev and a Kozlovsky), but one who would have ranked high in almost any age or country. The number of his works is very considerable, and among the more important are the following public monuments:—the bronze colossal group of the patriot Minin and Pozharsky, in Moscow; the monument to the emperor Alexander, at Taganrog; the statue of Richeleau at Odessa; Potemkin's monument, at Cherson; and that erected in honour of Lomonosov, at Arkhangelsk. Martos has been styled the Canova of Russia; and while some have admired the divine minuteness of those few sculptors of the greatest artist in point of refined elegance and high finish, they assert them to be free from that mannerism and over-studied gracefulness which were Canova's defects. It has been further admitted that they do not even arrive equal points with those by the famous Russian, Kozlovsky, although on the other hand they stand the test of a critical scrutiny much better. Their characteristics are nobleness of conception, truth of expression, and freedom, without negligence, of execution. In the draping of his figures he was, if anything, superior to Canova, besides which he had a particular talent for bas-relief subjects. One of the most admired of these is that which adorns the monument of the grand-duchess Helena Paulovna, and which represents a Hymen extinguishing a torch. Martos died April 12th, 1878, at the age of 79.

MARTYN, HENRY, known as The Missionary, born 1781, died 1812. The short life of this amiable and serious man may thus in brief be delineated. His birth was obscure. He was the son of a person who had been a labourer in the mines at Gwennap in Cornwall, who was probably of the same name. He had a particular talent for a parsonage and the situation of a clerk to a merchant at Truro, in which town Henry Martyn was born. He had his education in the grammar school and in the academy, and he had a considerable share of grammar learning, he tried for a scholarship in Corpus Christi College, Oxford; but failing in this, in 1797 he entered Saint John's College, Cambridge. Here he pursued his studies with such energy, that in 1801 he came in as a fellow. During this period his mind became directed with more than common earnestness to the truths of revelation. The death of his father is thought to have affected him at this period of his life so deeply as to have had no small share in turning his thoughts into the channel in which from this time they continued to flow; and not less the intimacy which at this time began with the Rev. Charles Simeon, the celebrated evangelical preacher in the university of Cambridge. He was chosen fellow of St. John's in March, 1803; but on behalf of the cause of religion, he finally determined to devote himself to the object in which many of his countrymen had by that time begun to engage themselves, of propagating Christianity in nations which had not received it. There had been, it is true, a Socio for the propagation of the gospel in foreign parts, but a new impulse and a new energy were given to such operations by the establishment of Missionary Societies, supported by the Methodists, the Independent Dissenters, and by the Evangelical party in the church of England; and he was not content with supporting this object by his influence at home, but he proposed himself to the African and Eastern Missionary Society as a person willing to undertake the duties of a missionary in the East, and especially in the countries of India in 1807.

It now became necessary that he should make himself master of the languages of the countries which he was about to visit; and with what success he studied them is evidenced by the fact that he had the superintendence of the translations of the New Testament made under the instructions of the Missionary Society, both into Persian and Hindustani. He made also some progress in an Arabic translation. In his capacity of missionary he traversed large tracts both of India and Persia. After about five years' labour in these countries, his health began to decline, and it soon became manifest that he would see his native country no more. He did however stay at home for an interval; but his strength wholly failing him, he was obliged to halt at Tokat, in Asia Minor, about 250 miles from Constantinople, where in a few days he died. The regent in England which this event cost him, and much would probably have been done by him in the cause to which he had devoted himself. As it was, he brought not a few both Hindus and Mohammedans to make profession of the Christian faith, and he caused the Scriptures to be translated among a people who had not previously known them.

An interesting account of his life, compiled from various Journals left by him, was published by the Rev. John Sargent, 1819.

MARTYR, JUSTIN. [JUSTIN MARTYR.] MARTYRS, MARTYRHOLOGY, from the Greek Martyr or Martyrus (μαρτυρ or μάρτυρ), a witness.

By the term martyr we now generally understand a person who suffers death rather than renounce his religious principles, and thereby endures sufferings short of death as called confessors. These terms appear to have been used in the same sense by some of the early Christian writers, and others give the title of martyr to all who suffered less than confessors because they were in a state of grace when the suffering was undergone, and those who were only imprisoned for its avowal. Tertullian calls the latter 'martyres designati, martyris elect.' The duty of enduring suffering, and even death, for the sake of religion was plainly taught by Christ and the apostles. (Acts, xii., 1, 2, 3, 4; xvi. vii.; iv. v.; v. 11; vii. 14, 15; v. 25; viii. 1, 2; x. 29.) Martyrs are either those who contain the histories of many martyrs, whose astonishing fortitude under the most cruel tortures was doubtless one great cause of the rapid diffusion of Christianity. Among the earliest and most valuable documents relating to this subject are the letter of the Bishop of Smyrna, giving an account of the martyrdom of Polycaur (a.d. 167), and that of the churches at Lyon and Vienne (a.d. 177), concerning the martyrs who suffered in the same reign, namely, that of Trajan. The collection of Eusebius (Hist. Eccl. ii. 1; v. 5; v. 1; and Larner's Works, vol. vii., p. 124, edd. of 1831.) We learn from these accounts that martyrs were highly honoured by the church, but we read nothing of that intercessory power nor of those extraordinary privileges which were to be had on the death of a martyr. The honour paid to them is expressed by the writers of the letter from Smyrna, where they state that the governor was induced to refuse their request to have the body of Polycaur delivered to them, lest they should leave him that was crucified, to worship this man; . . . . little considering that we can never forsake Christ, who has suffered for the salvation of all men. Him we worship as the Son of God. The martyrs we love as the disciples and imitators of the Lord: But in less than a century the reverence felt towards martyrs had quite changed. We learn from the writings of Cyril, bishop of Carthage (A.D. 248), that the sufferings of martyrdom were held to purge away the stain of sin, so that the martyr was admitted into paradise without needing the fires of purgatory. Martyrs were held to be especially dear to God, they not only their own sins, but those of other men, and even of the church; and the fiery baptism of martyrdom was accounted of equal efficacy with the sacraments of Christ. The same pain was endured by those who died by miraculous power. If they expired under their temple, called martyrum confessiones or memorandum were built over their graves, yearly festivals were instated in their honour, their relics were held sacred and believed to have the power of working miracles, and their intercessions with God was invoked as being peculiarly prevalent. If their sufferings fell short of death, they had ever after the highest authority in the church. But these honours appear sometimes to have had a bad effect on those to whom they
were paid, for Cyprian complains strongly of the disgraceful conduct of some who had been confessors.

In proportion to the honour paid to martyrdom was the diatribe attached to those who feared it. But here we observe a remarkable difference. In the celebrated age of the Christians, acting upon Christ's command in Matt. x. 23, did not think it disgraceful to avoid persecution by flight; but in later times the glory ascribed to martyrdom induced men to throw themselves in its way. Tertullian wrote a book against these captives, and Cyprian himself, when he retired from Carthage during a persecution, did not attempt to defend his conduct by general arguments, but pleaded an express revelation from God as his excuse. In a word, the martyrs of this age seem to have had more to lose, and more to gain, than those of earlier times.

The earliest accounts of Christian martyrdoms, for instance, that of Stephen in the Acts (vii.), are related with the utmost simplicity; but it was not long before the narrators of the deeds of martyrs were adorned with accounts of miracles, which, to say the least, are difficult to believe. This fashion had commenced even in the second century, for we find examples of it in the letter already mentioned, which relates the death of Polycarp. On these miracles Martial deprecates, and some of the primitive martyrs seldom failed of being accompanied by miracles, which, as we find them related in the old Martyrologies, were generally copied from each other: concerning sweet smells issuing from their bodies, and their wonderful resistance to all kinds of tortures and cruelties, and how, though they were burned and bruised, so as to tire their tormentors by the difficulty of destroying them, which yet, after a vain profusion of miracles, was always effected at the last. (Free Enquiry, p. 126, note.)

It is difficult to ascertain the number of martyrs who suffered in the early persecutions. Some writers have made it enormous, others quite insignificant. Among the latter is Dodsow, who has written an elaborate dissertation on the subject. (Dissertations Cyprianae, Diss. xi.) The explanation of these discrepancies would lead us to infer that the number of martyrs was considerable, but probably it has been much overrated.

Middleton has shown that many of the accounts in the Martyrologies are erroneous. He has collected them from Rome, some curious instances in which persons who never existed, heathen deities with their names slightly or not at all changed, and even inanimate objects, have been canonized as saints and martyrs.

The historical and authentic history which relates to the acts and deaths of martyrs is termed martyrology; and a work embracing one or more such narratives is called a martyrology. As examples of this description of works we may mention the Martyrology of Eusebius, which was translated into Latin by thelearned Father Bellasis, from Rome, some curious instances in which persons who never existed, heathen deities with their names slightly or not at all changed, and even inanimate objects, have been canonized as saints and martyrs.

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P. C. No. 910.

passing passage of a letter from Milton to Bradshawe, dated February 21, 1652. — He (Marvell) hath spent four years abroad in Holland, France, Italy, and Spain, to very good purpose, as I believe, and the gaining of those four languages; besides he is a scholar, and well read in his Latin and Greek authors, and no doubt of an approved consac-

Marvell was absent on this embassy nearly two years.

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On his return he began to correspond with his constituents almost every post.

The following passages are characteristic both of the man and the times:

"Nov. 14. 1657.—Really the business of the House hath been of late so earnest daily and so busy, that I have not had the time and scarce vigour left me by night to write; and to-day, because I would not omit any longer, I lose my dinner to make sure of this letter." Letter to Mayor and Town Hall.

"April 14, 1670.—The king about ten o'clock took boat with Lauderdale only, and two ordinary attendants, and rowed awhile as towards the bridge; but soon turned back to the house, as if he were not going out, and took his seat. Almost all of them were amazed, but all seemed so, and the duke of York especially was very much surprised. He told them it was a privilege he claimed from his ancestors, to be present at their deliberations. After these orations and orations, the lords were very well used to the king's presence, and sent the lord steward and lord chamberlain to him to enquire when they might wait as an House on him, to render their humble thanks for the honour he did them. The hour was appointed, and twelve, the Hou's half hour honour is run to almost the end since continued his session among them, and says, 'It is better than going to a play.'" Letter to William Ramesden, Esq.

The following presents a curious picture of the governor of Charles II.:

"The king having, upon pretence of the great preparations of his neighbours, demanded 300,000l. for his navy (though, in conclusion, he hath not sent out any), that the parliament should pay his debts, which the ministers would not, and he went to the House of Lords to exhort them, gave several bills. You see how far things were stretch'd beyond reason, there being no satisfaction how those debts were contracted; and all men foreseeing that what was given was never intended to discharge the debts, which are at this day risen to four millions, but diverted as formerly. Nevertheless, such was the number of the constant courtiers, increased by the apostate patriots, who were bought off for that term, some at six, others at ten, one at fifteen, the rest in parcels; in money, besides what offices, lands, and revolutions to others, that it is a mercy they gave not away the whole land and liberty of England. The duke of Buckingham is again 140,000l. in debt, and, by this prorogation, his creditors have time to tear all his lands in pieces, the Him-he and Cam he runneth so run to the end of their line, and are grown extremely chargeable to the king and odious to the people. They have signed and sealed 10,000l. a year more to the duchess of Cleveland, who has likewise near 10,000l. a year out of the new farm of the country, for the relief of the poor and is served at the post-office; and, they say, the revenue of all the king's lenses; the reversion of all places in the custom-house, the green wax, and, indeed, what not. All promotions, spiritual and temporal, pass under her cognizance."

In the following controversy with Dr. Samuel Parker (afterwards nominated bishop of Oxford by James II.). The following are a few of Parker's opinions, published in 1670, in a book entitled 'Ecclesiastical Policy.'

"It is better to submit to the unreasonable impositions of Nero and Caligula than to hazard the dissolution of the state. 'Princes may with less hazard give liberty to men's vices than to their consciences.' Of the different sects then subsisting he held 'that tenderness and indulgence to such as profess not and pay not the pure worship of God in our churches, and the most foolish neglect of our own quiet and security.'"

Marvell's various publications were mostly of a temporary interest. Mr. Dove gives the following account of the close of his career. Marvell had now rendered himself so obnoxious to the court and to the Whigs, that they began to consider his presump'tive, James, duke of York, that he was beset on all sides by powerful enemies, who even proceeded so far as to menace his life. Hence he was obliged to use great caution, to appease, and win public, and frequently to conceal the place of his abode; but all his care proved in effectual to preserve him from their vengeance, for he died on the 16th of August, 1678, aged fifty-eight years, not without strong suspicions (as his constitution was entire and he had long suffered under the effect of poison.)

(Life of Andrew Marvell, p. 68, Longman, Hurst, et al.)

Marvell's powers as a poet were not sufficient to ensure him lasting fame. Few or none of his poetical compositions, any more than his prose, obtained a lasting popularity. Many of his verses, particularly the satirical, are destitute of the coarseness of his time, from which his contemporaries, Milton, are so remarkably free. He was a lover of justice feeling; and a perception of the beauties of nature, expressed with a harmony of versification and felicity of language, which not unfrequently recall the 'Allegro' and 'T. N. Merlin of Milton. But Marvell's verse did not possess the power to secure its continued existence. He says of it himself, with a sort of prophetic truth, as lines to "His Coy Mistress:"—

'But at my back I always hear
_the deep music of the spheres;—
And yonder all before us lies
A mother of vast ages past.
'Thout beauty shall no more be found,--
Nor in thine marble veins shall sound
That music, which so long has sung.'

Upon the whole Andrew Marvell's claim to be honourably remembered is founded rather on his moral than his intellectual qualities. His intellectual merits are those of a wit and satirist; and though in these departments considerably above mediocrity, and even famous in his day, he produced a drooped fame. In the thoughts, other wits and satirists who are now forgotten. But the degree in which Andrew Marvell possessed that rare quality, political integrity, gives him a claim to the remembrance and even the reverence of after ages, still greater than in the oratory, and as the friend and associate of Milton. (Marvell's Works, by Captain Edward Thompson, vol. 1 of his Life, London, 1776.)

MARWAR, a district or division of the province of Ajmer, bounded between 24° 35' and 27° 45' N. lat. and between 70° 29' and 75° 15' E. long., and lying north-east to south-west is 310 miles, and its mean breadth is about 120 miles. The surface of the district is irregular and mountainous, rising towards the south; some of the hills and mountains are of granite, and, though these, many tribes of uncivilized people, who, by their predatory habits, are frequently troublesome to their more quiet neighbours. The failure of the annual fall of rain in 1811, together with the desolation occasioned by clouds of locusts, produced a drooped famine throughout the district, and drove great numbers of the inhabitants into the province of Gujarat, which, in the following year, also experienced a failure of rain, and the people died by thousands in a state of the greatest misery, so that it is said severely to have afforded 5000 l. a year for a year and a half, and is still a subject of the rajah of Jodhpore, who, in 22° 8' N. lat. and 73° 33' E. long., stands upon barren sand-hills, with scarcely any vegetation within a mile of its walls and it is badly supplied with water. The only towns remaining after the famine, is the city of the rajah, in 26° 18' N. lat. and 73° 5' E. long. The country has been so little visited by Europeans, that our knowledge concerning it is very scanty. The city of Jodhpore is said to be a large and very magnificent building. In 1818, when Prince William IV. was in the occupation of the sovereign of Jeyapore, the rajah of Jodhpore made an arrangement with the English government, under which, in return for our protection, he bound himself to pay the annual tribute of 2500 rupees, and to furnish a contingent of 1500 cavalry. The entire revenue of the district is estimated at 50 lacs of rupees (5,000,000l.), but usually falls far short of that sum.

MARY L., Queen of England, was the daughter of Henry, prince of Wales, and was born at Greenwich, on the 18th (Burnet says 19th) of Feb. 1516. She was the only one of several children born to her mother that lived; and on this account, according to Burnet, and because her father was then 'out of hopes of more children,' she in 1518 'declared herself heir to the crown of Wales, and sent her to Ludlow to hold her court there and projected divers matches for her.' It was first settled that she should be married to the dauphin by a treaty with the king of France, dated 9th November, 1518, but she ever was soon after broken. Then it was arranged, 24 June, 1522, that her hand should be given to the emperor.
Charles V. On Charles declining to fulfil this bargain, some overtures of a Scottish marriage followed in September, 1524. Finally, in April, 1527, it was agreed that the princess should be given in marriage either to the French king Francis, or to his second son, the duke of Orleans; but before it was determined whether she should be married to the father or the son, the Queen's monthly visit to her mother's divorse, implying her own illegitimacy, came to be agitated, and stopped all match-making for some years.

Mary was brought up from her infancy in a strong attachment to the ancient religion, under the care of her mother's brother, the Duke of Norfolk, whose instructions were not impaired by the subsequent lessons of the learned Ludovicius Vives, who, though somewhat inclined to the reformed opinions, was appointed by Henry to superintend her education. But Mary was deprived of her title of princess of Wales, which was transferred to the Princess Elizabeth soon after she came into the world; and during all the time that Anne Boleyn lived, Mary, who clung to her mother's cause and her own, remained in a state of exiledness, of which her father in the mean time, according to Lord Herbert, negotiations for disposing of her in marriage were twice entered into by her near relation the emperor, without her father's consent having been asked; in 1533 he offered her the hand of his daughter, but the match was excluded, not noted.

The opposition of the emperor was attributed to his fear that the pope might have had cause to exclude the princess from his court, and that his daughter might have given her consent to her marriage. But immediately after the execution of Queen Anne in 1536, a reconciliation took place between Henry and his eldest daughter, who, with great reluctance, was now prevailed upon to make a formal acknowledgment both to the emperor and the French king. For the six months following Mary had a certain influence in Rome, being represented as bishop of Rome's pretended authority, power, and jurisdiction within this realm heretofore usurped—and of the nullity of the marriage of her father and mother, which she declared 'by God's law and man's law incestuous and unlawful.' (See Smollett's History, p. 227.) She was consecrated to the priest's order by Cardinal Pole, as printed by Burnet, 'Hist. Ref.,' from the original, 'all written with her own hand.' By the new act of succession however, passed this year, she was again, as well as her sister Mary, deprived of the rights of her birth; which, from claiming the inheritance of the crown as the king's lawful heir by lineal descent. While she was thus circumstances, 'excluded,' as Lord Herbert expresses it, 'by act of parliament from all claim to the succession except such as the king shall give her' by the powers reserved to him of nominating his own successor after failure of the issue of Queen Jane, or of any other queen whom he might afterwards marry, she was in 1538 offered to Don Louis, prince of Portugal, and the next year to William, son of the duke of Orleans, from whom she might have it viewed as an obliquity. On the accession to all her father's capricious movements in the matter of religion, she so far succeeded in regaining his favour, that in the new act of succession, passed in 1544, the inheritance to the crown was expressly secured to her and her issue. But the issue of the king might have by his then wife Catherine Parr.

Mary's compliance with the innovations in religion in her father's time had been dictated merely by fear or self-interest; and when, after the ascension of her brother, his ministers proceeded to place the whole doctrine, as well as discipline, of the national church upon a new foundation, she openly refused to go along with them; nor could all their persuasions and threats, aided by those of her brother himself, bring her to assent. During this period various attempts that were made to prevail upon her may be found in Burnet's 'History,' and in King Edward's 'Journal.' Mention is made in the latter, under date of April, 1549, of a demand for the hand of the Lady Mary by the father of the son, the archbishop of York, that there was talk for marriage with the infant of Portugal, which being determined, he should have answer. About the same time it is noted that 'whereas the emperor's ambassador desired leave, by letters patents, that may be sent to the lady Mary, that as a prince, she be made a spectator of the Queen's council, and now how the king was to be informed of the business, no hope, which I perceived by her letters, except I saw some short amendment, I could not bear it. She answered, that her soul was God's, and her faith she would not change, nor dispose her opinion with contrary doing. It was said, I constrained not her faith, but wished her not as a king to rule, but as a subject to obey, and that her example might breed too much inconvenience.' In fact throughout this reign the princess Mary was the centre of the intrigues of the Catholic party, and the hope of her succession their main strength and support. In the summer of the same year a project was entered into by her friends at home and abroad for removing her from England, where her faith at least, if not her person, was probably supposed to be in some danger. On the 29th of August, her brother writes: 'Certain pinnaces were prepared to see that there should be no breach between the two. This business was done. Also appointed that the lord chancellor, lord chamberlain, the vice-chamberlain, and the secretary Pole should see by all means they could whether she used the sanck they had, that the laws should be executed on her chaplains.'

Mary's firm adherence to the Roman faith finally induced Edward, under the interested advice of his minister Northumberland, to attempt at the close of his life to exclude Mary, and to make her brother by a secret will by the Lady Jane Grey, an act which was certainly without any shadow of legal force. [Edward VI.] Although Lady Jane however was actually proclaimed, scarcely any resistance was made to the accession of Mary, the confirmation of whose reign as far as is datable from the 6th of July, 1553, the day of her brother's death. [Gray, LADY JANE.]

Mary was scarcely seated on the throne when she proceeded to re-establish the ancient religion. In the course of the following year Cranmer, and with him the rest of the archbishops, bishops, who had been deposed for nonconformity in the late reign, were restored to their sees, and the mass began again to be celebrated in many churches. In the following month archbishop Cranmer and bishop Latimer were committed to the Tower. The pope, by a bull passed an act repealing all the acts, nine in number, relating to religion, that had been passed in the late reign, and replacing the church in the same position in which it had been at the death of Henry VII. Besides these, and the other indications given by the court of a determination to be completely reconciled with Rome, were followed by the insurrection, commonly known as that of Sir Thomas Wyatt, its principal leader, which broke out in the end of January, 1554, but was in a few days effectually put down by the suppression being signalled by the executions of the unfortunate Lady Jane Grey and her husband the Lord Guildford Dudley, of her father the duke of Suffolk, and finally, of Wyatt himself.

In the 24th of July, Mary was married in the cathedral church of Winchester to the prince of Spain, afterwards Philip II., the son of the emperor Charles V.; and the reunion with Rome was speedily completed by a parliament which assembled in the beginning of November, and which passed repealed acts in the same shape, immediately after arrived in England with the dignity of papal legate, restoring the authority of the pope, repealing all laws made against the see of Rome since the 20th of Henry VIII., reviving the ancient statutes against heresy, and in short re-establishing the whole manner of religious policy as it had existed previous to the first innovations made by Henry VIII. By one of the acts of this session of parliament also Philip was authorised to take the possession of king of England, and to take all acts appear to have been passed with scarcely any debate or opposition in either house, except occasionally upon mere points of detail and form.

The remainder of the history of the reign of Mary is occupied chiefly with the persecutions of the protestants to the reformed doctrines. The Protestant writers reckon that about two hundred and eighty victims perished at the stake, from the 4th of February, 1555, on which day John Rogers was burnt at Smithfield, to the 10th of November, 1556, on which day Dr. Grindal was executed. Dr. Lingard admits that after expunging from the Protestant lists 'the names of all who were condemned as solens or traitors, or who died in the uncleanness of their profession of their martyrdom, or who would for their heterodoxy have been sent to the stake by the reformed prelates themselves, had they been in possession of the power,' and making every other reasonable allowance, it will still be found that
in the space of four or almost two hundred years, perished in the flames for religious opinion." Among the most distinguished sufferers were Hooper bishop of Gloucester, Ferrar of St. David's, Latimer of Worcester, Ridley of London, and Cranmer archbishop of Canterbury. Gardiner, bishop of Winchester and lord chancelor, was Mary's chief minister till his death in December, 1555, after which the direction of affairs fell mostly into the hands of cardinal Pole, who after Cranmer's deposition was made archbishop of Canterbury; but the notorious Bonner, Ridley's successor in the see of London, has the credit of having been the principal assailant of heresy. It may be remarked, so far from contributing to put down the reformed doctrines, appear to have had a greater effect in disgusting the nation with the restored church than all other causes together.

At the same time that the new opinions in religion were thus attempted to be extinguished by committing the bodies of those who believed in them to the flames, the queen gave a further proof of the sincerity of her own faith by restoring to the church the tithes and first-fruits, with all the_rectories, glebe-lands, and tithes that had been annexed to the crown in the times of her father and brother. She also re-established several of the old religious houses, and endowed them as liberally as her means enabled her.

The year 1555 was a memorable one in the history of France and England, in the beginning of September, 1555, and continued absent for about a year and a half. The bond however by which this marriage attached the English court to Spain and the Empire remained the same as ever; and when the death of her husband, Philip, in September, immediately succeeding the spring of 1557 between Spain and France, Mary was prevailed upon to join the former against the latter power. The principal consequence of this step, in so far as this country was concerned, was the loss of the only remaining English possession in the Low Countries, the town of Calais, which surrendered to the duke of Guise, in January, 1558, after a siege of a few days. This event, which was regarded as a national disgrace worse than any mere loss, excited the indignation of the English nation, and was a reproach to the policy of the court; and Mary herself is said never to have recovered from the blow. Some ineffectual efforts were made to retaliate upon France by force of arms; but at last negotiations for a peace between the three belligerent powers were opened at Cambrai, in the midst of which queen Mary died, worn out with bodily and mental suffering, on the 17th of November, 1558, in the forty-third year of her age and the sixth of her reign. She is affirmed to have said on her deathbed, that if her breast should be opened in her decease, Calais would be found to be grave upon her heart. Mary left no issue, and was succeeded on the throne by her half-sister Elizabeth. [ELIZABETH.]

MARY STUART, queen of Scotland, was born on the 7th of December, 1542. She was the third child of King James V, and was betrothed to her cousin, Philip, the son of the daughter of the duke of Guise, who had previously borne her husband two sons, both of whom died in infancy. A report prevailed that Mary too was not likely to live; but being unwaddled by her nurse at the desire of her anxious mother, in presence of the English ambassador, the latter wrote to his court that she was as good a child as he had seen of her age. At the time of her birth her father lay sick in the palace of Falkland; and in the course of a few days after her birth, the tidings of her death reached him, and his health being hastened by distress of mind occasioned by the defeats which his nobles had sustained at Fala and Solway Moss. James was naturally a person of considerable energy and vigour both of mind and body, but previous to his death he fell from the bed of sickness, and at the time of his decease it was found that he had made no provision for the care of the infant princess, or for the administration of the government. The ambitious Beaton seized this opportunity, and without the consent of the queen, which was the law, she seized the throne immediately. She was the last king, immediately assumed the office and title of regent. The fraud was soon discovered; but by the haste and imprudence of the regent Arran and Henry VIII. of England, who wished a marriage agreed to between himself and Arran, and his infant son, but the contract was rejected by the queen; and on the 9th of September, 1543, Mary was crowned by the archbishop, who was also immediately afterwards appointed lord high chancellor of the kingdom. He had even the address to win over to the regent Arran to his views, both political and religious; and thus the French or Roman Catholic party obtained the ascendency. The latter two years of her life were spent at Linlithgow, a royal palace of which she was born; she was then riered to Stirling castle; and when the disputes of partens in the country rendered this a somewhat dangerous residence, she was carried to Inchmarnoch, a sequestered island at the mouth of the Clyde, where she remained about two years. In the meantime a treaty of marriage had been concluded between her and the dauphin Francis; and in terms of the treaty it was resolved she should be sent into France to be educated at the French court, and if the nuptials could be concluded. Accordingly in the fifth year of her age, she was taken to Dumbarton, where she was put on board the French fleet; and, after sailing towards the end of July, she was, after a tempestuous voyage, landed on the 1st of August, and was hence she was taken to the palace at St. Germain-en-Laye. At every turn her progress she was received with all the honours due to her royal rank, and as a mark of respect and joy the princes were thrown open and the prisoners set free.

Some authorities placed the marriage with the French king's own daughters in one of the first acts of the kingdom, where she made such rapid progress in the acquisition of the literature and accomplishments of the age, that when visiting her in the end of the year 1558, the English ambassador was struck by her attentiveness, her ready understanding of things, her penetration, and her command of the French language. She was, as her mother observed, one of the politest but most corrupt in Europe. Here Mary became the envy of her sex, surpassing the most accomplished in the elegance and fluency of her language, the grace and nature of her manners, the liveliness of her sympathy, and the tenderness of her affections. She was the essence of womanly modesty and behaviour. The youthful French, to whom she was betrothed, and was soon to be united in wedlock, was about her own age, and they had been playmates from early childhood. A fine uniformity of character was the foundation between them; but the dauphin had little of her vivacity, and was altogether considerably inferior both in mental endowments and personal appearance. The marriage, which took place on the 24th of April, 1558, was celebrated with great pomp; and when the dauphin, taking a ring from his finger, presented it to the cardinal Bourbons, archbishop of Rouen, who, pronouncing the benediction, placed it on her finger, the lovely and youthful bride, the vaulted roof of the cathedral rung with the shouts and congratulation of the huns. The solemnities being over, the married pair retired to one of their princely retreats for the summer; but that season was hardly gone when, a vacancy having occurred on the throne of England by the death of Queen Mary, claims were made by her brother, Philip, on the crown of France, which, with the French king's daughter, was the daughter of Henry VIII. of England; and notwithstanding Elizabeth had succeeded the throne, and was, like her sister Mary (both daughters of King Henry VIII.), queen both de facto and by the designation of her parliament of England, yet the claim of the French princess was made and continued to be urged with great pertinacity by her ambitious uncle, the prince of Lorraine. On every occasion on which the crown of England was on the table, the French and the king of France and queen, who was ostentatiously greeted as the king and queen of England; the English arms were engraved upon their plate, embroidered on their banners, and painted on their furniture, and Mary's own favourite device at the time was, the lion, and after that device, the crown of England with the moratur, meaning that of England. Henri II. died in July, 1559, and in September of the same year France was solemnly crowned at Rheims. Mary was now at the height of her splendid; it was doomed however to be only a temporary accession. In June, 1560, in December of the same year, her husband, who had been wonting away for some months, expired. By this latter event, Catherine de' Medici rose again into power in the French court, and Mary, who did not relish being second to anyone, was not disposed to quit the French court, and returning to her native country. The queen of England however interposed; and because Mary would not abandon all claim to the English throne, refused to grant her a free passage, being moved to the
piece of discourtesy not less perhaps by envy than by jealousy. Mary notwithstanding resolved to go, and at length, after repeated delays, all lingering on the soil where fortune had smiled upon her, she reached Calais. Here she bade adieu to her attendants, and sailed for Scotland; but as long as the French coast remained in view, she continued involuntarily to exclaim, 'Farewell, France! Farewell, below controls!' She landed at Leith on the 19th August, 1561, in the 19th year of her age, and after an absence from Scotland of nearly 13 years. She was now, in the language of Robertson, 'a stranger to her subjects, without experience, without a ministry, and in a short hour of the utter extinction of every seed of dissent and reform. The same causes however which gave strength to the ecclesiastics gave strength also, though more slowly, to the great body of the people; and at length, after the repeated losses of Flooden and Flodden, and Solway and Solway, and the fall of nearly the whole lay nobility and leading men of the kingdom, brought all classes within the influence of public events,—the energies, physical and mental, of the entire nation were drawn out, and under the guidance of the religious sentiments of the nation, which had never been awakened inquisition upon the whole fabric of the ancient religion. The work of destruction was just completed, and the Presbyterian government established on the ruins of the other, the Scotch Calvinists, who, Mary returned, witnessed the land. She knew little of the art she had been taught in France to shrink at the stowal of Protestant opinions: her habits and sentiments were therefore utterly at variance with those of her subjects; and, nurtured in the lap of ease, she could not at first accustom her breast, and she was inevitably to result from her being thrown among them.

Accordingly the very first Sunday after her arrival she commanded a solemn mass to be celebrated in the chapel of the palace; and, as might have been expected, an uproar ensued. The priest to whom she had appointed the mass, and had not some of the lay nobility of the Protestant party interfered, the riot might have become general. The next Sunday Knox had a thundering sermon against idolatry, and in his discourse he took occasion to say that a single mass was, in his estimation, more to be feared than ten thousand armed men. Upon this, Mary sent for the reformer, desiring to have an interview with him. The interview took place, as well as one or two subsequent ones from a like cause; but the only result of all was that Knox, after plain at variance with each other. In one of these fruitless conferences the young queen was bathed in tears before his stern rebukes. Her youth however, her beauty and accomplishments, and her affability, interested many in her cause. The queen's party, on the other hand, was in the hands of the Protestants, the general peace of the country remained unbroken.

A remarkable proof of the popular favour which she had won, appeared in the circumstances attending her marriage with Darnley. Various proposals had been made to her from different quarters; but at length she gave up all thoughts of a foreign alliance, and her affections became fixed on her cousin Henry Stuart, lord Darnley, the youthful hereditary of both houses of Lennox, to whom she was united on Sunday, 15th Feb., 1562. The marriage was performed in the chapel of Holyrood-house, according to the rites of the Roman church. Whether the queen had any right to choose a husband without consent of parliamnet was in that age, as Robertson observes, a matter of some dispute; but that she had no right to confer upon him, by her private authority, the title and dignity of king, or by a simple proclamation invest him with the character of a sovereign, was beyond all doubt: yet so entirely did she possess herself of the mind of the nation, standing the clamours of the malecontents, her conduct in this respect produced no symptom of general dissatisfaction. The queen's marriage was particularly obnoxious to Queen Elizabeth, whose jealous eye had never been withdrawn from her rival cousin. Darnley also did not look favourably on it. Nevertheless the current of popular opinion ran decidedly in Mary's favour, and it was even remarked that the prosperous situation of her affairs began to work some change in favour of her religion.

This popularity however was the result of adventitious circumstances only. There existed no real sympathy or opinion between Mary and the great body of Lowland Protestants and whatever led to the manifestation of her religious sentiments dissolved in the same degree the fascination which her other qualities had created. It is in this way we may account for the assistance given to Darnley in the assassination of Rizzio, a circumstance not Mary, who seems to have come in place of Chatelherault. The latter was a French poet who sailed in Mary's retinue when she came over from the Continent; and having gained the queen's attention by his performance of a love song, the genius of a foolish attachment for her, to a bold and audacious audacity of behaviour which demanded at last the interposition of the law, and he was condemned and executed. Rizzio, a Piedmontese by birth, came to Edinburgh in the middle of 1561, and his death and Chatelherault's execution. He was skilled in music, had a polished and ready wit, and, like Chatelherault, wrote with ease in French and Italian. His first employment at court was in his character of a musician; but Mary soon advanced him to a service more suitable to his skill. In this situation he was conceived to possess an influence over the queen which was equally hateful to Darnley and the Reformers, thought on very different grounds. Both therefore concurred in his destruction, and he was assassinated accordingly. Darnley, Rizzio, and Chatelherault were all murdered in one day, but it was plain the queen did not believe and could not forgive him; and having but few qualities to secure her regard, her growing contempt of him terminated in disgust. The news of Mary's marriage was rapidly advancing in the queen's favour, and at length no business was concluded, no grace bestowed, without his assent and participation. Meanwhile also Mary bore a son to Darnley; and after great preparations for the event, the queen proceeded on 13th March, 1562, to the palace, and the ceremony of baptism was performed, and he was innately to result from her being thrown among them.

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affix her signature to them; upon which the prince was solemnly crowned at Stirling, 29th July, 1567, when little more than a year old. Mary continued a prisoner at Loch- leven; but by the aid of friends, in less than twelve months she effected her escape, and collected a considerable army. The battle of Langside ensued, where she was completely routed; upon which she fled towards Galloway, and thence passed into England, hoping to secure the favour of Elizabeth. Mary contrived to detain her a captive in her dominions till the end of the year 1569.—a period of about nineteen years,—when she was accused of being necessary to Babington's conspiracy against the queen of England. To try her sentence she was appointed by Elizabeth, but Mary refused to acknowledge its jurisdiction. "I came into the kingdom," she said, "an independent sovereign, to implore the queen's assistance, not to subject myself to her authority." In this however she was mistaken: her character, Mary consented to be tried. The commission accordingly proceeded: Mary was condemned, and, on Wednesday the 8th of February, 1569, beheaded at Fotheringay castle, in the 45th year of her age. When about to enter the scaffold, which was repaired for her execution, she was allowed to stop and take farewell of the master of her household, Sir Andrew Melville, whom her keepers had not suffered to come into her presence for some weeks before. Melville had the handle of his hand knaps down before he with tears in his eyes, declared this was the heaviest hour of his life. "Not so to me," said Mary: "I now feel, my good Melville, that all this world is vanity. When you speak of me hereafter, say that I died firm in my faith, willing to keep my enemies, conscious that I never disgraced my native country, and rejoicing in the thought that I had always been true to France, the land of my happiest years. Tell my son,—and here she burst into a flood of tears, overcome by her feelings which no words can fully give an idea of—who had been so proud in his infancy, and whom she still loved notwithstanding his coldness and ingratitude,—Tell my son, I thought of him in my last moments, and that I said I never yielded, by word or deed, to aught that might lead to his ruin, and that I was of opinion, and may be he shall be thousands times more happy and prosperous than she ever was." [Elizabeth; James I. of England.] She died professing the religion in which she had been brought up, and to her adherence to which many of her miseries may be traced.

For further particulars concerning Mary, and the love-letters, &c. which she is said to have written to Bothwell, we must refer the writers who have minutely discussed the events of Mary's life to the published versions. These are too numerous, from the time of Buchanan and Knox on one hand, and Lesley, bishop of Ross, on the other, down to the present day, when Mr. Tytler's History of Scotland is in course of issuing from the press. We may notice however Jebb's life on which Anderson's Collections, Goddall's Examination, Tytler's Enquiry, Wittaker, Laing, and Chalmers, and the Life of Mary, by Henry Glassford Bell, which forms vol. 24 of Constable's Miscellany.

MARY, wife of William III. [William III.]

MARYBOURGH. [Queen's County.]

MARYLAND, one of the United States of North America, lies between 36° 3' and 39° 45' N. lat. and 75° 10' and 75° 23' W. long. It is divided into two portions by Chesape- kea Bay, to the east of which the county of Calvert is situated, and to the west of which is the county of Queen Anne. The eastern boundary of Maryland is defined by the Potomac River, which flows into the Chesapeake Bay at Annapolis. A considerable part of Maryland is forested, but in the western portion of the state, the soil is of a lighter character, and the vegetation is of a less luxuriant nature. The climate of Maryland is moderate, and the soil is generally fertile. The state is divided into ten counties, each with its own county seat.

The Chesapeake Bay has a level surface, and is divided into two parts by a shallow strait, which separates the two branches of the bay, and affords a passage between them. The eastern branch of the bay is bounded on the south by Virginia for 15 miles; on the east by the Atlantic Ocean, which washes its shores for 35 miles; and by the state of Delaware, which extends 36 miles along its northern and 91 miles along its eastern boundary. Pennsylvania forms the whole northern boundary of this state, for 290 miles, along the 39° 42'. The western portion of Maryland is divided from Virginia by a straight line running north and south for about 36 miles, which constitutes the western boundary of Maryland. On the south, where it also borders on Virginia, the Potomac River forms a large estuary, which is bounded by the sea on the west, and thePotomac River on the east.

The surface of the county is calculated to be 10,000 square miles, or somewhat less than the double area of Yorkshire.

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Bay, which it enters in 30° N. lat. At the falls above Georgetown it is ten feet deep, and at Alexandria three fathoms; so that vessels of any burden can ascend to the latter place, and large vessels as far as Washington navy-yard. The whole course of the river exceeds 320 miles; larger vessels of two miles above Harper's Ferry, and smaller ones much higher.
The Patuxent, the second largest river, rises on the eastern border of the hilly country, in 39° 20' N. lat. Its general course is south-east, and towards its mouth it becomes a bay, from two to three miles wide. It is navigable for vessels of 250 tons to Nottingham, forty-six miles from its outlet, and boats ascend fourteen miles higher, to Queen Anne's Town.

The Susquehanna is a river. A large tributary of the Delaware, likewise rises in the eastern portion of the hilly region, north-west of the source of the Patuxent; after a course of about thirty miles in an east-south-east direction, it falls over a ledge of rocks, and before it enters Chesapeake Bay it widens into an estuary ten or more miles in length. Vessels of 600 tons can sail to Fell's Point, the lower harbour of Baltimore, and boats may ascend to Elkhire Landing, eight miles above Baltimore.
The Susquehanna river traverses the northern part of Maryland for fifteen miles, before it falls into Chesapeake Bay.

Climate.—The climate is rather mild in the level part of the country, but the winter is severe enough to block up the harbour of Baltimore, with snow and ice. The winter of the town of Balto., the extreme north of the state is from 9° to 22°; the mean annual temperature exceeds 53°, being about three degrees higher than that of London. In the level and hilly districts the summer-heat is moderated by sea-breezes; but in the hilly and forested districts it remains of a very considerable temperature. These valleys experience very severe winters, being from 300 to 800 feet above the sea-level. The prevailing winds blow from north-west and south-east. Rain is rather abundant, the mean annual fall amounting to about forty inches, and is distributed in equal proportions throughout the year. Drought is rare.

Productions.—Wheat, Indian corn, and tobacco are chiefly cultivated; and rye, oats, and barley less extensively. Vegetables and vegetables are generally produced; and the climate is such as to allow of the growth of the most luxuriant vegetation. The production of England, as apples, pears, plums, peaches, succeed in most places, and are of good quality. Hemp and flax are raised to a considerable extent in the upper valleys. The whole country was originally covered with forests, which still remain, composed of a great variety of trees, especially oak, hickory, ash, walnut, pine, and tulp-tree. Along the coast of the Atlantic and the adjacent swamps a wild grape grows, the fruit of which yields a pleasant wine.

The mineral and water springs are numerous. The sulphur springs of Balto., and the spring of a sulphur which can be distilled, are celebrated. The sand and water, which are found in the woods, and are mixed with the sand of the sea, are used in the manufacture of bricks.

Manufactures.—Various manufactures are carried on in Balto. and its vicinity; they consist of iron-wrought, wood, and cotton; the former having been established in the district about forty years ago, and the latter two or three years ago.

Commerce.—The maritime commerce is almost entirely in the hands of the inhabitants of Balto., and having only a small portion of it. The imports consist of flour, wheat, hemp, flax, corn, tea, coffee, tea, and rum, and are about equal in value to the exports. The value of the imports from 1st of October, 1832, to the 30th of September, 1833, amounted to $4,328,567, and the exports to $4,062,467. This commerce employed 156,323 tons of shipping, of which 63,443 entered the port, and 92,880 of the goods. The third of this amount of shipping belonged to the United States, and the remainder were foreign vessels. The shipping of Maryland is more than 80,000 tons, of which nearly 30,000 belong to Balto.

History.—Maryland was first settled as a place of refuge for the persecuted Roman Catholics of England by Lord Baltimore [Baltimore, LORD] in 1634, when 200 Roman Catholics established themselves at St. Mary's, and the country received the name of Maryland from the wife of Charles I. The number of settlers soon increased, not only by emigration from England, but also by the addition of non-conformists from New England and Virginia. During the commonwealth the oppression of the Catholics retarded the growth of the colony, but it has now reached a state of complete independence. The seat of government was fixed at Annapolis, where it has ever since remained. The constitution of the state was adopted in 1776, and has since been often amended. The legislative body consists of two assemblies, a senate and house of delegates, of which the senators, elected in every two years, are chosen by the citizens and elect the senators by ballot out of their own number. The senators serve for five years. The members of the house of
MASCLEF, FRANCIS, was born at Amiens, in 1662. He very early devoted himself to the study of oriental languages, in which he attained an extraordinary degree of proficiency. Having been brought up to trade, he became first a curate in the diocese of Amiens, afterwards a canon in the cathedral. In 1706 he obtained the pastorate of the church of Amiens, which place him at the head of the theological seminary of the district and made him a canon. He died, in 1706, and Masclef, whose opinions on the James controversy were not in accordance with those of the prelate whom he succeeded, brought his life to a close in a theological seminary and to retire from public life. From this time he devoted himself to study with such close application as to bring on a disease, of which he died, on the 24th of November, 1728, at the age of sixty-six.

Masclef's chief work is the 'Grammatica Hebrewae, a punctis alisique inventis Massoreticis liberae,' in which he embodied an elaborate argument against the use of the vowel points. The first edition was published in 1716, and speedily called forth a defence of the points from Guarin, a learned Benedictine monk. In the year 1731 a second edition of Masclef's work was published at Paris containing an answer to Guarin's objections, with the ad\n
MASCULINE and NEUTER. ([GENDER:])

MASERES, FRANCIS. The dates and facts in the following sketch are taken from 'The Gentleman's Magazine' for June, 1824.

He was born in London, December 15, 1731. His father was a physician, descended of a family which was driven out of France by the revocation of the Edict of Nantes. Francis was educated at the Charterhouse School, and received the degree of B.A. in 1752, obtaining the highest place, both in classics and mathematics. He then (having first obtained a fellowship in his college) removed to the Temple. He received in the same time called to the bar, went to the Exeter circuit for some years with little success. He was then appointed (the date is not mentioned) attorney-general for Canada, in which province he remained till 1773, distinguished 'by his loyalty during the American contest, and his zeal for the interests of the province.' On his return in 1773 he was appointed curator and professor of the Exchequer, which office he held till his death. He was also at different times deputy recorder of London and senior judge of the sheriffs' court.

Baron Maseres (as he was commonly called) had left behind him a celebrity arising partly from his own writings and partly from the munificence with which he devoted a part of his income to reprinting such works as he thought useful, either in illustration of mathematical science or in confirmation of that of his own country. These were the objects of his private studies, and a peculiarity of his mathematical views which tinctured the whole of his writings as well as his selection of works to be reprinted, required some explanation.

It is well known that the art of algebra grew faster than the science, and that, at the time when Maseres began his studies, a branch of knowledge which is essentially distinct from algebra, whether of an arithmetical, or of which arithmetic is the basis, and in which, especially in the higher branch, thescientific method was pushed with peculiar power, the science of numbers in its methods, reasoning, and results, while in fundamental definitions were allowed to be expressed in arithmetical language, and restricted by arithmetical conceptions of numbers. This, however, is not the case with the work and language of Maseres. The consequence was, that the algebraical books were anything but logical; and while those who could make for themselves the requisite generalization at the proper time were more likely to employ themselves in extending the boundaries of the science than in writing elementary works, all students had to take a large part of algebra on trust, the faith being built partly on authority, partly on continuance, seeing verifiable truths produced by its operations.

Maseres, when a young man, rejected all of algebra which was not arithmetical, as being what he could not comprehend him.
Trigonometry,' Greenw. p. determine London, tablet papers. Scriptores the above an 656; The kindred treatise Barbadoes promote inwards educated and 1745, whence Institutions.' Fluxions, James Gregory, otherwise the Snell, earliest the to the革 the Gregoire, to the different works of Marlborough. No. 911. His superintendence of the Revolution was so great a degree he was obliged, in the beginning of his reign, to favour the Whigs. The marriage of Miss Hill with Mr. Masham (son of Sir Francis Masham, of Otesin in Essex) in 1707, occasioned an open quarrel with the Duchess of Marlborough, who was, in consequence of it, deprived of her majesty's confidence. Harley, after her death, married her favourite; a change of ministry took place, and in 1711 Mr. Masham was raised to the peerage. He and his wife appear to have been actively engaged in the intrigues of the Tory faction, and the change of the ministry occasioned the fall of the exiled House of Stuart. Lady Masham lived a long time after the death of the queen, and died herself at an advanced age, December 6, 1734.

MASON, WILLIAM, born in 1725, was the son of a clergyman at Hull. He took his B.A. degree at Cambridge in 1743, after which he removed from St. John's College, and was elected fellow in 1747. Having taken orders, he was presented to the rectory of Aston in Yorkshire, and became chaplain to the king. His political principles strongly opposed him to the American war, and he was cashiered for his views in obtaining parliament. The horrors of the French Revolution however are said to have caused a change in his opinions, but as he was growing an old man when it broke out, the timidity of age probably worked as strongly as the reign of terror. In 1793, he was one of the judges of the Marshalsea, for years priorent and canon-resident of Yeeck. There is a tablet to his memory in Poets' Corner, Westminster Abbey.

Mason's Poems are now almost forgotten. Two tragedies, 'Elsfra' and 'Carcassacus,' a descriptive poem called 'The English Garden,' and some odes, are his principal productions, but he is now perhaps best remembered as Gray's biographer and friend. His style is that of an imitator of Gray, and not by so perfect an artist in language as his master, he has been proportionally less successful. In addition to his poetical reputation he possessed considerable skill in painting and music, and in the latter subject entertained opinions not at all consonant to those of musicians in general. The works of Mason are dry and mechanical style possible, excluding all such expression as should depend on the powers and taste of the organism. (Mason's Compendium of the History of Church Music.)

MASONRY (from the French maison and magon) signifies both the operation of constructing with stone and the parts of a building consisting of such material. It is a most important branch of architectural practice, because much, both of the durability and beauty of an edifice so constructed, depends upon the excellence of the workmanship and the quality and colour of the stone. Owing to its expense, masonry is comparatively rarely employed in this country, except for public buildings or others of the highest class, the mason's work being in other cases restricted to such
parts as steps to doors, string-courses, facias, and plain cornices externally, and to pavements and stairs in the interior. Yet that degree of stone-work does not constitute what is termed a brick and stone building, because such term implies a considerable mixture of stone and brick, namely, that the doorways, window dressings, columns, parapets, angle-quoins, and all the ornamental parts are of stone, the made or plain face of the wall only being of brick. But in the thirteenth century, for instance, in some of the later Gothic styles, the brick-work being now covered with stucco, cement, or mortar, to resemble as far as possible the stone, when the latter is used for columns, pilasters, and ornamental parts; or, as is now more frequent, the brick is used throughout, even in the position, which is said to be not only more economical, but far more durable than stone itself, owing to its being to a certain extent vitrified. This mode has been resorted to with great success for the Ionic capitals of St. Pancras Church, London.

Of all our freestones, Portland stone is perhaps the very best yet discovered, both for durability and colour; but its high price and the expense of working it prevent its being so extensively used as it would be with a little care and trouble. Bath stone is the kind more generally made use of for building purposes, it being soft when first taken out of the quarry, and easily worked. Neither its texture nor tint however is so good; and when discoloured by time, as is so often the case, it acquires a certain disagreeability. In fact a living architect (Mr. A. Bartholomew) describes it in his "Hints on Fire-proof Buildings," as the vilest of material, which, when new, is mean and swarth, and which decays before I myself am old; and be further mentioned, that his own Hospital was the earliest instance of the extensive use in London of Bath stone. Ketton stone, which has been used for the tower of St. Dunstan's in the West, Fleet Street, is, though not equal to Portland, greatly superior to Bath stone. Cornwall granites and Dundee granite are of great strength for constructions demanding strength and solidity, and have been used in several of the docks and new bridges.

Walls which are not of solid masonry throughout, but built either of brick or inferior stone and rubble, with only an external facing of squared stone laid in courses, are termed asher, or ashlering. [Ashler.]

Rusticated ashler or stone work is that where the separate stones are divided at their seams or joints, which is done either for Chamfering or for the purpose of catching the light, and being often placed at an angle, or slightly slanting, so that it has a general projecting surface, by which means, when united together, those surfaces are flush with the plane of the wall, and the sunk margin round each forms a kind of channel between the stones. This mode is always adopted when horizontal rustices alone are used, as is now too frequently the practice, for it is not only poor and monotonous, in comparison with rustieating with both vertical and horizontal joints, but unmeaning in itself, and therefore justly condemned by Sir W. Chambers. Though generally made quite smooth, the faces of the rusticis are sometimes tooled, or else, though very rarely, hatched, perimurculated, or frosted; all which varieties may likewise be combined, with exceedingly good effect and great diversity in the rustieating. Such rusticked rusticis are sometimes distinguished by the name of bosages.

Stones inserted quite through a wall, in order to bind it firmly together (in the absence of which the ashlering would be nothing but original coating, adhering to the brickwork only by mortar), are called stuffed stones, and those, at the base of the wall, projecting beyond its general plane, for the purpose of giving greater solidity just above the foundation, are termed footings.

When large stones, either with or without mortar, are called rubble scales, and the stone itself rubble.

MASTERS, FREE. According to the extravagant and whimsical hypotheses entertained by some of those who have written upon the subject of freemasonry, it is an institution of ancient origin, and of universal importance. While it originated with the builders of the tower of Babel, those others are content with tracing it no farther back than the temple of Solomon. If we are to believe their, the institution has been continued down in uninterrupted succession from that very remote time to the present day, through all the changes of governments, religion, civilisation, society, and knowledge. Against this there exists one very simple, yet fatal, argument, namely, that were this really the case, such an uninterrupted series of tradition must have kept alive and handed down to us much information that has, on the other hand, been lost, for it is well known that we find that even a technical knowledge of architecture itself has not been so preserved; else how are we to account for the ignorance which everywhere prevailed with respect to Gothic architecture and its principles almost as soon as the style itself became general? The theory of resemblance between the fraternities of masons in the middle ages, and such institutions as those of the Eleusinian mysteries, and the corporation of Ionian architects, is not only possible, but highly probable, being supported by curious coincidence of the invention of printing, when the means of communicating knowledge were few and imperfect, no no reader made presented itself of extending and keeping up the speculative and practical information among any profession, than by establishing the profession itself into a society, all the members of which would have one object and one interest in common. This would be more particularly the case with regard to architecture, which calls for the co-operation of mechanics, artificers, and the heads of the various classes of the clergy, and the ministers of religion, naturally induced the clergy to take it under their especial protection. For a long time not only were ecclesiastics the chief patrons but almost the chief professors of the art; yet as they had occasion for the assistance of practical masons, they accordingly appointed them to fellowship with themselves, establishing a kind of order of a mixed character, just as the orders of chivalry combined at their origin the principles of military and religious discipline. Hence some have supposed that the confraternity of masons, which has been established at the time of the Crusades, the more probable hypothesis perhaps is that they were related to each other only in emanating from the same source from the influence of ecclesiastical power; and that being so derived would alone account for the richness and splendour, which the guilds of masons affected; and, together with their zeal in accumulating knowledge for themselves, the desire to confine it to their own body.

The merely intellectual associations of inventions and improvements in architecture are communicated from one country to another, a circumstance which at once accounts for the sudden spread of pointed or Gothic architecture throughout the whole of the west of Europe; and at the same time for the correspondence of style being at all satisfactorily where that style actually originated, or that nation contributed most towards its advancement. Owing also to the jealousy with which the masons kept their knowledge to themselves, it is not at all surprising that the history of the art during the middle ages should be involved in so much obscurity that it can now be traced only by the monuments, all documents relative to the study of it have been concealed as much as possible, even when something of the kind must have been in existence. Among the works which partly contribute to this obscurity, though not so great, is that of the Order of Companions, which was, on the one hand, the suspicion with which the church itself began to regard them as societies that might acquire an influence not easily watched, and which might be turned against itself; and on the other, the spread of knowledge from one member to another, with the gradual depriving such bodies of their utility and importance, and deriding it impossible for them to confine their knowledge exclusively within their own pale.

In this country an act was passed against Masonry in the third year of Henry VI. at the instigation of the bishops of Winchester. It was however never enforced, and hence himself afterwards countenanced the brethren by his prelates at lodges of masons. It was also patronised by James I. of Scotland; but it was no longer indispensable to the church, which accordingly withdrew its protection, and would otherwise have been occasioned by the
Masonry revived again in this country about the time of the civil war, yet merely in semblance, being altogether different in object and character from the ancient Masonry, and becoming merely 'speculative' or modern Masonry, an institution in nowise connected with architectural practice. From this country it was first introduced into France about the year 1725; into Spain in 1728, and into Italy in 1730, by the first Masonic lodge was established at France. It was afterwards however the object of persecution not only in France and Italy, but also in Holland and Germany. Some writers, more especially Abbé Baruel and Professor Robison, have made every effort to diminish or prevent its spread into an organised secret conspiracy against religion and existing governments. If the charge has been unjustly made, it must be owned that the profound mystery in which it has cloaked itself gave some colouring to such charges, it being but natural to infer that if there was an object to call for such extraordinary degree of secrecy, it could hardly be sought for, or in accordance with the interests of society at large. The greater probability is that there is nothing either good or bad to conceal; that the mystery has nothing more than an innocent mystification; and that its symbols and instructions, whatever meaning or purpose they may originally have had, are now become mere forms and signs retained by the brethren or 'free and accepted masters,' as they style themselves, the object of which is merely to wear the dress and the same satire, and to do the same thing as their ancestors, at their respective times.

MASONITIES. [HEBREW LANGUAGE]

MASOVIA. [POLAND]

MASQUER [ENGLISH DRAMA]

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MISSA (in Latin). The term missa has two different meanings; for: some derive it from missio or dimissio, 'dismissal,' because in the early ages of the church the catechumeni, or new converts who were not yet admitted to partake of the sacrament, were dismissed from the church after the consecration of the Host. Others derive it from the Hebrew word 'missah,' i.e., obligation or sacrifice in commemoration of the sacrifice of our Redeemer for the sins of man kind. Dunciage, in his 'Glossarium,' art. Missa, gives the various opinions on the etymology of the word. The missa, signifying the ceremony or rite of consecrating the Host, is found in the epistles of St. Ambrose, St. Augustine, and Cæsarius, bishop of Arles. See also Baronius, in his "Annales."

The mass is a church service which forms an essential part of the ritual of both the Roman Catholic and Greek or Eastern churches, and in which the consecration of the sacramental bread and wine takes place. It is performed entirely by the officiating priest standing before the altar, and attended by the deacon and sub-deacon. The prayers of the mass are all in Latin in the Roman Catholic church, in ancient Greek in the Eastern church, and in Syrian among the Mononites and Jacobites, but never in the vulgar tongue. The mass takes place within the church, and the congregation take no ostensible part in the service, but they follow it mentally or in their prayer-books, in which the text of the prayers is occasionally accompanied by a translation in the vulgar tongue. The priest does not address the congregation, but has his back turned to them, except at the end of certain prayers, when he turns round, and says, 'D minus vocum,' (The Lord be with you), and at the 'Ora pro Fratres,' &c. ('Brethren, pray,' &c.), which are responded to, on the part of the congregation, by the clerk.
ton and Hailey. North and south of these places the Connecticut runs through a valley, from two to three miles wide, which is covered by an alluvium of great fertility. West of it the country immediately rises into high hills, which gradually attain the elevation of more than 2000 feet. Beulah, in the western district of this valley, being traversed from north to south by two considerable ridges, whose most elevated parts are from 3000 to 4000 feet high. The valleys of this district have a very fertile soil.

Rivers. — The district of the mountainous region is traversed by the Housatonic, which rises near the north-western corner of the state, and traverses it by a southern course of nearly 50 miles, when it enters Connecticut; it is a very rapid river and not navigable in Massachusetts. The Connecticut leaves New Hampshire, and traverses it by a course of about 70 miles, including its numerous bends. It is navigable for boats in the whole of its course in Massachusetts. [CONNECTICUT.] No considerable river falls into Massachusetts Bay. Coastal streams which fall into Boston harbour, though its whole course does not exceed 30 miles, is navigable for about eight miles for large boats, the tide flowing up to Dedham. The Merrimac rises in New Hampshire on the western declivities of the White Mountains, north of the town of North Conway, and flows 20 miles to the north-east, when it receives a branch from Winnipesaukee lake, and then runs for 52 miles south-east-south, till it is met by the Nashua river from the south-west. Below the junction with the Nashua, the Merrimac curves gradually to the east for 30 miles, and then, running north-east about 30 miles, when it falls into the Atlantic after a course of more than 150 miles. In its natural state the Merrimac opposed great impediments to navigation. The tide ascends to Haverhill, 18 miles from its mouth, but above it the course of the river is obstructed by several rapids and rapids. The lowest is below Chelmsford, where the river falls over a ledge of rock, to avoid which a canal with three locks has been made. Between this ledge of rock and Haverhill the stream, though still rapid, is navigable. Numerous falls on the Merrimac are now avoided by canals. The number of these canals is eleven, and an uninterrupted navigation has thus been effected as far up the river as Concord in New Hampshire. The importation of two-thirds of the stone for the harbours of New England has been much increased by the Middlesex Canal.

Climate. — The climate of Massachusetts is much colder in winter, and warmer in summer, than the southern districts of Great Britain, though the difference of latitude amounts to about nine degrees. The temperature seems to be 48°, or about two degrees less than that of London. The winter commences about the middle of December and terminates about the middle of March. In this season the snow frequently amounts to 40, 50, or 100 inches, and sometimes descends below zero of Fahr.; snow covers the ground and the rivers are frozen hard enough to bear loaded waggons. The spring terminates in the middle of May. The summer is hot, and at the solstice the thermometer frequently rises to 90°, and in some days it sometimes attains 90° and even 100°. In the same season it sometimes descends in the night to 60°, whilst at noon it is 90°. The summer lasts to the beginning of October, when the weather grows rapidly colder. The prevalent winds are from the north-west and north. The north-west wind prevails during the whole year, except the summer, when the wind blows mostly from the south or south-west. In winter the coldest wind is from the north-west. Rain is common in summer and autumn, and sometimes falls in large quantities to more than 40 inches, which is nearly double the quantity that falls in many places on the continent of Europe. Yet it is stated that the number of rainy days is fewer in Massachusetts than in most countries of Europe. Slight shocks of west and north. The north-west wind prevails during the whole year, except the summer, when the wind blows mostly from the south or south-west. In winter the coldest wind is from the north-west. Rain is common in summer and autumn, and sometimes falls in large quantities to more than 40 inches, which is nearly double the quantity that falls in many places on the continent of Europe. Yet it is stated that the number of rainy days is fewer in Massachusetts than in most countries of Europe. Slight shocks of west and north.

Productions. — As Massachusetts was early settled, a greater portion of its surface is cultivated than in most of the other states, and agriculture has been more improved. The farms generally average from 100 to 200 acres. The principal agriculture consists of wheat, oats, rye, barley, flax, peas, hops, beans, and pumpkins, which are raised only in small quantities. Forests still cover a considerable portion of the surface. In the plains there are only pine, birch, elm, ash, birch, oak, maple, and the yellow pine on sand and gravel. The hilly and mountainous country produces oak, walnut, birch, maple, ash, cedar, cherry, and chestnut. In the valleys and on the banks of the rivers there are elm, cherry, maple, and aspen. Some marshy places are covered mostly with white cedar. All the fruit-trees of England are cultivated. The cattle and the hog are for the most part of the former, in the mountainous and hilly country west of Connecticut river. Wolves are still found in the hilly region. Fish abound in the rivers and in the sea. The whale fishery in the sea between Massachusetts and the Great Bank is important. Some of the cod-fishery in this part has diminished; since the codfish have disappeared, and only the black fish (Delphinus globiceps, Cuv.) comes there in shoals, and is taken in considerable numbers by the inhabitants of Nantucket, and is sold on the vessels moored in Buzzards Bay. The fishery of cod in Massachusetts Bay nearly terminates near Nantucket is still more important, and also that of mackerel. The other fish abounding in the same tract of sea are haddock, herring, halibut, and sturgeon. Lobsters, crabs, and some other shell-fish abound in Massachusetts Bay.

Iron occurs in several places, but is not much worked. There are some traces of copper and lead. Limestone abounds in Berkshire, where some good marble also occurs. Its is found about the town of Greenfield.

Inhabitants. — The population, which during the last century increased very rapidly, at present increases more slowly. The emigration towards the west is considerable. In 1820 the population amounted to 351,725, and in 1830 to 610,408 inhabitants. The increase has been about 178 individuals to each square mile. In 1857 it had increased to 691,222 individuals, or more than 94 to each square mile. Massachusetts has no slaves.

Canals and Railroads. — The Middlesex canal begins at Charlestown, terminates at Concord, and terminates at Chelmsford on the Merrimac; the length is 27 miles; the width at the surface thirty, and at the bottom twenty feet; the depth is three feet. The highest level is 104 feet above Boston harbour. By this canal the country is opened up to both the city and the town of Boston. The Blackstone canal extends from Worchester (which is about half way between Boston and the Connecticut river) to Providence in Rhode Island; the length is 44 miles, of which sixteen are in Rhode Island. The Hampden and Hampden canal branch off from the Connecticut river at Northampton, and unites with the Farmington canal at the southern boundary-line of Massachusetts; the Farmington canal, which may be considered as its continuation, traverses the state of Connecticut in its whole breadth, terminating at New Haven. The whole line is about 80 miles long, of which thirty are in Massachusetts.

The Quincy railroad, the first road of this description made in the United States, was constructed for the purpose of transporting the granite of that town to the tide-water; it is 3 miles long. A railroad intended to unite the town of Boston with Albany on the Hudson river in New York, has been opened on the banks of the Hudson, and comes as far as Troy. Another railroad is constructing from Boston to Lowell, 36 miles; and another from Boston to Providence in Rhode Island, about 40 miles; probably both are completed.

Manufactures. — The manufactures of this state are more considerable than those of any other state of the Union, if its extent and population are considered. The most important branch is the construction of vessels; but the manufactures of cotton and woolen goods, of paper, leather, and glass, the extensive trade in provisions, and the construction of some rope manufactures, sugar-houses, and train-oil distilleries, of which last there are also some in New Bedford and on the island of Nantucket. Straw bonnets are made by the country people in some districts. There are 250 incorporated manufacturing companies in the state, and each of these principals visit England, especially silk, linen, and woollen. Some of the chief countries to which the manufactures of Massachusetts principally visit are England, Russia, and Sweden; from the two latter countries they import large quantities of Indigo, and the United States, figures, and copper goods.
United States are permitted to fish cod on the western coasts of Newfoundland, the Straits of Belleisle, and the coast of Labrador; and in this branch of fishery, together with that of the Atlantic, more than 1000 vessels and boats belonging to Massachusetts are engaged. New Bedford and the island of Nantucket also send about 250 vessels to the whale and sperm fishery, the tonnage of which amounts to more than 80,000 tons; and when the several vessels are added, which are supplied by Boston, Salem, and Plymouth, the shipping employed by this state, in this branch of industry, probably exceeds 100,000 tons.

The total of the imports from 1st of October, 1832, to 30th of September, 1833, amounted to 19,340,911 dollars, and that of the exports to 9,683,192 dollars, of which latter 5,150,584 dollars were of domestic produce, and 4,532,598 dollars of foreign produce, which clearly shows that many of the states lying farther west receive their imports by way of Massachusetts, but export their produce by another road. In carrying on this trade, more than 225,000 tons of American and somewhat more than 30,000 tons of foreign shipping were employed.

Political Division and Towns.—The state is divided into 32 counties; the capital is Boston. [Bos'ton.] Round the Bay of Boston, whose entrance is formed by Point Alderton on the south, and Point Shirley on the North, are some important places, as Quincy, which has quarries of granite, and 4000 inhabitants; Cambridge, the seat of Harvard College, with 6071 inhabitants; and Charlestown, with 8783 inhabitants, and a dockyard belonging to the general government. Cambridge and Charlestown are united to Boston by bridges, and may almost be considered as suburbs.

Farther north along the shore is Lynn, with 7600 inhabitants, who are extensively engaged in the manufacture of leather-skins and shoes; Salem, built on a peninsula in Marblehead Harbour, has an extensive commerce, especially with the East Indies, and 13,946 inhabitants; Gloucester, on the south-side of Cape Anne, has a spacious harbour, with 7186 inhabitants, who are engaged in the fisheries; and Newbury Port, a well-built place at the mouth of the Merrimack, has 6388 inhabitants, who are engaged in fishing and commerce.

On the shores of Barnstable Bay is Plymouth, with a good harbour; it was the first settlement in the colony, and contains 4751 inhabitants. Barnstable has 4000 inhabitants, and is engaged in the fisheries. On Buzzards Bay is New Bedford, with 7392 inhabitants, who are extensively engaged in the whale fishery and in the manufacture of spermaceti candles and salt. In the interior is Lowell on the Merrimack, with extensive manufactures of cotton and wool; in 1833 more than 36,000,000 yards of cotton goods were made here. Worcester, near the centre of the state, where the railroad and the Blackstone canal meet, has 4172 inhabitants, and some internal commerce. Northampton, on the Connecticut river, has 3613 inhabitants and large tan-yards. Pittsfield, on the banks of the Housatonic, near the boundary of New York, has 3570 inhabitants, with manufactures of iron and considerable trade.

History.—This part of the American continent was probably discovered by John Cabot at the end of the fifteenth century, but though visited several times during the following century, no settlement was made. A company was chartered by James I. in 1606, to which country this was granted under the name of North Virginia. The first settlement however was only formed in 1620 at Plymouth, by about 120 families of non-conformists, who had fled to Holland, and thence proceeded to Cape Cod. They framed a constitution, and took an oath to keep it. Afterwards became the groundwork of the constitution of the state. The first

The increase of the colony was thus promoted, its population in 1730 did not exceed 120,000 individuals. Since then it however has improved rapidly. In the Revolution war Massachusetts took a leading part, by resisting the demands of the English government, and creating a naval force. Hostilities were commenced by the battle of Lexington. It adopted a new constitution in 1780, and after Massachusetts, which up to 1819 formed a part of the state, took its constitution into the constitution was annexed, and admitted in 1820. According to this constitution the legislature consists of a senate and a house of representatives. The senate is chosen by the counties, each citizen possessing landed property to the amount of 60 dollars having a vote, but the number of the senators to be chosen by each county depends on its quota of taxes. The other house is elected by the towns, according to their population, each citizen possessing 50 dollars having a vote. In 1830 there were senators and 361 representatives. The executive power is vested in a governor, lieutenant-governor, and nine councillors.

The first two officers are chosen annually by the electors and the councillors by the joint ballot of the two houses from among the persons returned as senators. Massachusetts sends two members to the senate and thirteen to the house of representatives at Washington.

Education.—As generally in the United States, the education of the lower classes is an object attended to by all the states. For that purpose the State is divided into small townships, or separate corporations, of from five to seven square miles, and the number of these townships amounts to 250. But that the distance which children have to go to attend school may not be too great, each township is divided into smaller districts. In each a school is established, wherein the children are taught by a woman; but in winter it is visited by children from ten to fifteen years old. The children are instructed in orthography, reading, writing, English grammar, geography, history, arithmetic, and the use of the common instruments of the mechanist.

The number of schools is estimated at 254, but a great proportion of them are small establishments, kept in the interval between the winter and summer terms of the district schools. A larger institution of this description is attended by the children of wealthier parents, who wish to give them a greater amount of useful knowledge. Their number amounts to more than 60. Among the learned institutions is Harvard College at Cambridge, three miles from Boston, the best endowed institution in the United States; it has an anatomical museum, a botanical garden, a collection of minerals, and a library of 35,000 volumes. There are at present thirty instructors and about two hundred and thirty students. Other collegiate institutions are Williams College at Williamstown, with seven instructors and about one hundred and twenty students; Amherst College, with twelve instructors and two hundred and sixty students; the Theological Seminary at Andover, which has a deservedly high reputation, and the Newton Theological Seminary.

The year 1832 marks an era in the education of the State of Massachusetts. The State Statistics and other documents have been collected, and a view of the state of education has been formed. The Massachusetts Annual Register of Education, published every year, gives an account of the condition of education in the United States, Massachusetts included.

Printed by William Clayes and Sons, Stamford street.

END OF VOLUME THE FOURTEENTH.